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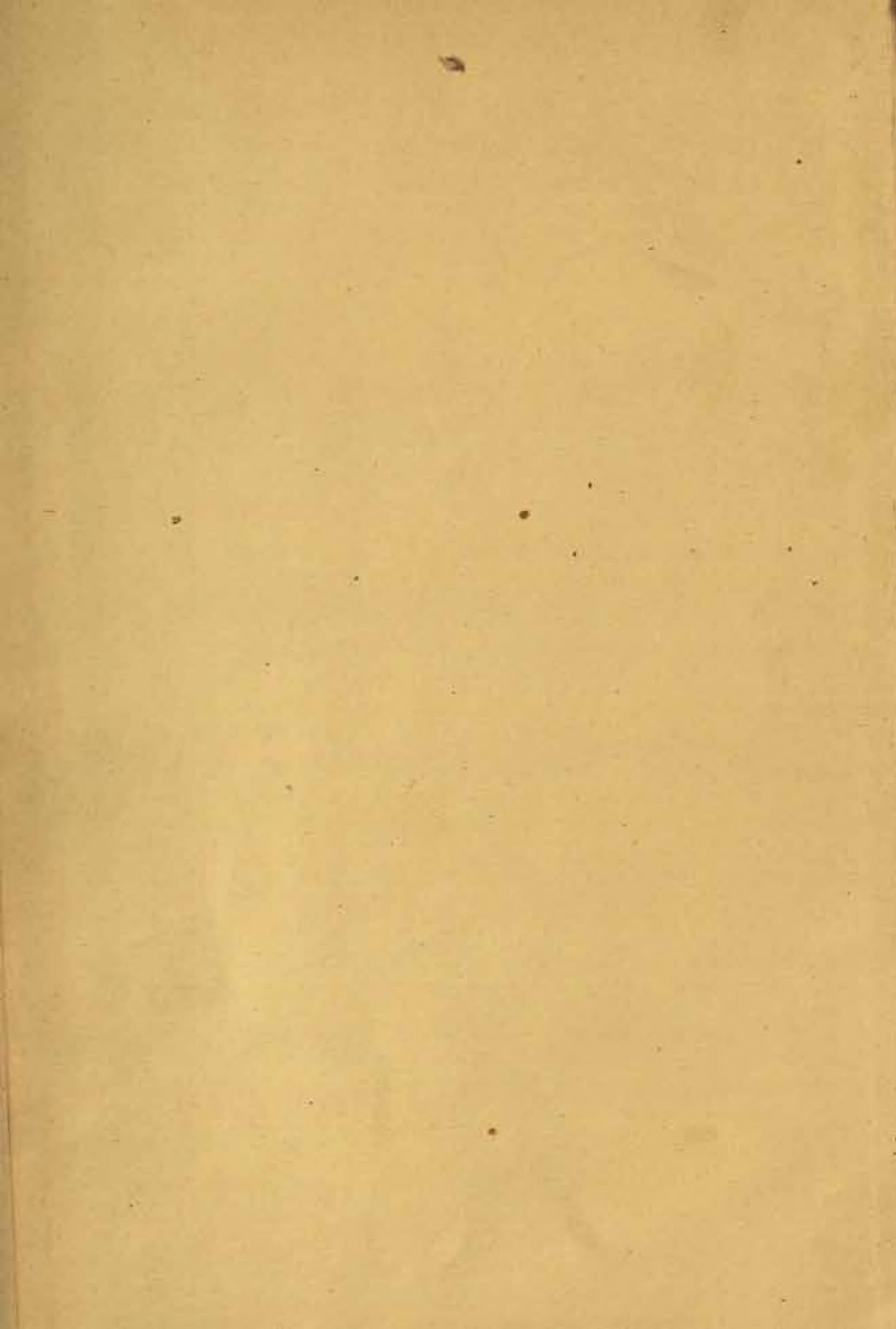
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THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

16804

GREAT BRITAIN AND IRELAND.



VOL. XXXII.

572.05
J. R. A. I.

PUBLISHED BY THE

Anthropological Institute of Great Britain and Ireland.

3, HANOVER SQUARE, LONDON, W.

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1902.

NOTICE.

Each volume of the *Journal* published since 1899 contains the papers presented to the Institute between January and December of the calendar year; the minutes of the Annual Meeting in January, with the President's Address, and the Reports of the Treasurer and Council forming the introduction to each volume. The present volume, therefore, contains those papers which were presented between January and December, 1902; and opens with the President's Address delivered in January, 1902.

For convenience of reference, all volumes of the new (imperial octavo) series which began in 1898 are numbered in continuation of the old demy octavo series, Vols. I-XXVII. Thus Vol. I of the imperial octavo series = Vol. XXVIII of the old series; and the present Vol. XXXII corresponds to N.S. Vol. V.

The Index to the present volume includes an index to the Institute's monthly publication *Man* for the year of issue 1902; a copy of which is sent to all Fellows of the Institute in due course.

This copy of *Man*, together with the present volume of the *Journal*, completes the ordinary publications of the Institute for 1902; and should be bound up at the end of the current volume.

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ERRATA.

PLATE XIV.

Fig. 13. for "From a photograph by" read "from a photograph lent by."

Fig. 12. for "*Imigangala*" read "*Umungungulu*."

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 1869 Winwood, Rev. H. H., M.A., F.G.S., 11 *Cavendish Crescent, Bath.*
 1901 Withers, A. Delisle, Esq., *Ewhurst, 21 Lichfield Road, Kew Gardens.*
 1881 Wolfe, Miss E. S., *High Broom, Crowborough, Sussex. (*)*
 1902 Wright, D. D., Esq., M.R.C.S., 15 *Queen Anne's Street, S.W.*

SUBSCRIBERS TO THE PUBLICATIONS OF THE INSTITUTE.

- Birmingham.* Central Free Library.
London. Guildhall Library.
Manchester. John Rylands Library.
Newcastle-on-Tyne. Public Library.

SOCIETIES, ETC., EXCHANGING PUBLICATIONS

WITH THE
ANTHROPOLOGICAL INSTITUTE.

GREAT BRITAIN AND IRELAND.

Dublin... Royal Dublin Society.

— Royal Irish Academy.

Edinburgh... Royal College of Physicians.

— Royal Society of Edinburgh.

— Society of Antiquaries of Scotland.

Glasgow... Philosophical Society.*London*... British Medical Association.

— Egypt Exploration Fund.

— Folklore Society.

— Geologists' Association.

— Hellenic Society.

— India Office, Whitehall.

— Japan Society.

— Journal of Mental Science.

— Nature.

London... Palestine Exploration Fund.

— Quatuor Coronati Lodge, No. 2076.

— Royal Archaeological Institute.

— Royal Asiatic Society.

— Royal Colonial Institute.

— Royal Geographical Society.

— Royal Society.

— Royal Society of Literature.

— Royal Statistical Society.

— Royal United Service Institution.

— Society of Antiquaries.

— Society of Biblical Archaeology.

Taunton... The Somersetshire Archaeological Society.*Truro*... Royal Institution of Cornwall.

EUROPE.

AUSTRO-HUNGARY.

Agram... Kroatische Archäologische Gesellschaft.*Budapest*... Magyar Tudományos Akadémia.

— Magyar Nemzeti Néprajzi Östálya.

Cracow... Akademija Umiejetności.*Vienna*... Anthropologische Gesellschaft.

— K. Akademie der Wissenschaften.

Sarajevo... Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).

BELGIUM.

Brussels... Académie Royale des Sciences, etc. de Belgique.

— Société d'Anthropologie de Bruxelles.

— Société d'Archéologie de Bruxelles.

DENMARK.

Copenhagen... Société des Antiquaires du Nord.

FRANCE.

Lyon... Société d'Anthropologie de Lyon.*Paris*... L'Anthropologie.

— École d'Anthropologie.

Paris... Revue de l'Histoire des Religions.

— Société d'Anthropologie.

— Année Sociologique.

GERMANY.

Berlin... Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.

— K. Museum für Völkerkunde.

— Seminar für Orientalische Sprachen.

Breslau... Centralblatt für Anthropologie, etc.*Gotha*... Petermann's Mittheilungen.*Halle-a-d-Saale*... Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.

— Deutsche Morgenländische Gesellschaft.

Kiel... Anthropologischer Verein für Schleswig-Holstein.*Leipzig*... Verein für Erdkunde.*Munich*... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.*Stuttgart*... Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens... Ephemeris Archaïologikè.
— Annual of the British School of Archaeology.

ITALY.

Florence... Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.
Rome... Bullettino di Paletnologia Italiana.
— Società Romana di Antropologia.
Rome... Accademia dei Lincei.
Turin... Archivio di Psichiatria.

NETHERLANDS.

Amsterdam... Koninklijke Akademie van Wetenschappen.
Leiden... Internationales Archiv für Ethnographie.

The Hague... Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

PORTUGAL.

Lisbon... Portugal em Africa.
Porto... Portugalia.

RUSSIA.

Helsingfors... Suomen Muinais Muistoyhdistyksen Arkakauskirja (Journal of the Finnish Archaeological Society).
Moscow... Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.
St. Petersburg... Imper. Akademia Nauk.

SWEDEN.

Stockholm... Academy of Antiquities, National Museum.
— Nordiska Museet.
— Ymer.

AFRICA.

Cape Town... S. African Philosophical Society.

AMERICA.

BRAZIL.

Rio de Janeiro... Museu Nacional.

CANADA.

Montreal... Royal Society of Canada.
Toronto... Canadian Institute.

UNITED STATES.

Cambridge, Mass.... Peabody Museum, Science.
Chicago... American Antiquarian.
— Field Columbian Museum.

New York... American Museum of Natural History.
Philadelphia... Free Museum of Science and Art (University of Philadelphia, Department of Archaeology).
Washington... American Anthropologist.
— Bureau of Ethnology.
— Smithsonian Institution.
— United States Geological Survey.
— United States National Museum.
Worcester, Mass.... American Journal of Psychology.

ASIA.

CHINA.

Shanghai... Royal Asiatic Society (China branch).

INDIA.

Bombay... Anthropological Society.
— Indian Antiquary.
Calcutta... Bengal Asiatic Society.
Colombo... Royal Asiatic Society (Ceylon branch).

JAPAN.

Tokio... Asiatic Society of Japan.
— Tokio-Daigaku (Imperial University).

JAVA.

Batavia... Bataviaasche Genootschap van Kunsten en Wetenschappen.

STRAITS SETTLEMENTS.

Singapore... Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu... Bernice Pauahi Bishop
Museum.
Melbourne... Royal Society of Vic-
toria.
Sydney... Australian Museum.

Sydney... Australasian Association for
the Advancement of Science.
— Royal Society of New South
Wales.
Wellington, N.Z... Polynesian Society.

PUBLICATIONS RECEIVED IN EXCHANGE FOR "MAN."

ENGLAND.

London... Church Missionary Intelli-
gencer.
— Climate.
— Journal of the East India Association.
— Lancet.
— Reliquary and Illustrated Archæ-
ologist.
— Saga-Book of the Viking Club.
— South American Missionary Society.

AUSTRIA.

Prag... Český Lid.

BELGIUM.

Brussels... Missions Belges.
Ghent... Volkskunde.

FRANCE.

Dax... Société de Borda.
Paris... Revue des Traditions Populaires.
— Melusine.

GERMANY.

Brunswick... Globus.
Danzig... West Preussisches Provincial-
Museum.
Dresden... Bericht des Vereins für
Erdkunde.
Guben... Niederlausitzer Mittheilungen.
Munich... Korrespondenzblatt.
— Geographische Gesellschaft.
— Prähistorische Blätter.
Nürnberg... Bericht der Natur-historis-
chen Gesellschaft.

ITALY.

Como... Rivista Archeologica della Pro-
vincia de Como.
Palermo... La Scienza Sociale.
Rome... Rivista Italiana di Sociologia.

NEW SOUTH WALES.

Sydney... Science of Man.

OCEANIA.

Fiji... Na Mata.
Samoa... O le Sulu.

PORTUGAL.

Lisbon... Archeologo Português.
Serpa... A Tradição.

RUSSIA.

St. Petersburg... Zhivaya Starina.

SERBIA.

Alexinatz... Karadjitch.

SWITZERLAND.

Zürich... Schweizerisches Archiv für
Volkskunde.

UNITED STATES.

Boston... American Journal of Archæ-
ology.
Chicago... Open Court.
Meriden... Biblia.
New York... Popular Science Monthly.
— Science.
Philadelphia... Proceedings of American
Philosophical Society.

JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND.

ANNUAL GENERAL MEETING.

JANUARY 28TH, 1902.

A. C. HADDON, Esq., Sc.D., F.R.S., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The Election of the following as Ordinary Fellows of the Institute was announced:—Mr. G. NORMAN, Mr. HESKETH PRICHARD, Mr. J. B. PENGELLY, Dr. W. H. FURNESS, M.D., Mr. A. WILLEY, D.Sc., Miss HUSSEY.

The Election of the following as Honorary Fellows of the Institute was announced:—Dr. T. BRIGHAM, Honolulu; Professor G. RETZIUS, Stockholm; Dr. F. BOAZ, New York.

The PRESIDENT declared the ballot open, and appointed, as Scrutineers, Mr. W. GREATHEED and Mr. C. J. TABOR.

The TREASURER presented his Report for the year 1901 (p. 5).

The SECRETARY read the Report of Council for 1901 (p. 2).

The adoption of these Reports was moved by the PRESIDENT, and seconded by Mr. BRABROOK. The Reports were discussed by Messrs. GOMME and GREATHEED, and accepted *nem. con.*

The PRESIDENT delivered his Annual Address.

The SCRUTINEERS gave in their Report, and the following were declared to be duly elected, to serve as Officers and Council for the year 1902:—

Report of the Council for the year 1901.

President.—A. C. Haddon, Esq., Sc.D., F.R.S.

Vice-Presidents.

Wm. Gowland, Esq., F.S.A.

| Col. Sir T. H. Holdich, K.C.I.E., C.B.

Prof. G. B. Howes, LL.D., F.R.S.

Hon. Secretary.—J. L. Myres, Esq., M.A., F.S.A.

Hon. Treasurer.—A. L. Lewis, Esq., F.C.A.

Council.

H. Balfour, Esq., M.A.
Sir W. S. Church, M.D., Pres. R.C.P.
W. Crooke, Esq., B.A.
Prof. D. J. Cunningham, M.D., F.R.S.
O. M. Dalton, Esq., M.A., F.S.A.
W. L. H. Duckworth, Esq., M.A.
J. Edge-Partington, Esq.
A. J. Evans, Esq., M.A., LL.D., F.S.A.
J. G. Frazer, Esq., D.Litt., D.C.L.
J. G. Garson, Esq., M.D.

J. Gray, Esq., B.Sc.
E. F. Im Thurn, Esq., C.B., C.M.G.
A. Keith, Esq., M.D.
R. B. Martin, Esq., M.P.
Prof. W. M. F. Petrie, D.C.L., LL.D.
R. H. Pye, Esq.
E. G. Ravenstein, Esq., F.R.G.S.
Prof. W. Ridgeway, M.A.
W. H. R. Rivers, Esq., M.D.
F. C. Shrubsall, Esq., M.A.

Mr. C. H. READ proposed, and Professor G. B. HOWES seconded, that a cordial vote of thanks be given to the PRESIDENT, and that he be requested to allow his address to be printed in the *Journal* of the Institute.

Votes of thanks to outgoing Council, and to the Treasurer and Secretary, were also passed.

REPORT OF COUNCIL FOR THE YEAR 1901.

The Council is able to report once more a year of very satisfactory progress, with an increased number of Fellows elected and of meetings held, and a distinct extension of the Institute's activity and usefulness. The loss of twelve ordinary fellows by death and resignation has been more than balanced by the election of thirty ordinary fellows and of seven local correspondents under By-law VII. There has thus been a net increase of eighteen, leading to a total membership on January 1st, 1902, of 374. Among the losses which the Council has with regret to announce are Lord Bute, Sir Cuthbert E. Peek, Bart., Mr. J. J. Tylor, and Mr. Anthony Wilkin.

Although LORD BUTE did not take any active part in the Institute's work, he was much interested in the archaeology and linguistics of the Mediterranean peoples.

By the premature death of SIR CUTHBERT EDGAR PEEK, the Anthropological Institute has lost a friend whom it could ill spare, and who at one period devoted much time and thought to the administration of its affairs.

Sir Cuthbert was born on January 30th, 1855, and was educated at Eton and at Pembroke College, Cambridge, graduating B.A. in 1879. In 1881 he undertook some journeys in Iceland, and in New Zealand in 1882, and his notes on Maori customs were presented to the British Association in 1883.

He became a member of the Anthropological Institute in 1885, and in 1891 he was elected honorary secretary, a position which he held for five years. During his secretaryship he introduced great improvements into the administration, devoting himself especially to the development of the library, the collection of ethnological photographs, and the illustration of the *Journal*. In 1894 he started a "Vocabulary Publication Fund," to which he was a generous contributor. Sir Cuthbert was a judicious collector of objects of ethnological interest, and formed a museum of considerable value. He died on July 6th, 1901 at the early age of 46.

MR. JOSEPH J. TYLOR, M.I.C.E., who died at Cap d'Ail on Good Friday, was a member of the Institute since 1892. Having visited Egypt in pursuit of health and being possessed of ample means, he planned a luxurious publication of the monuments of El Kab. Increasing ill-health forbade his carrying on the work in Egypt personally, but with the help of his friend Mr. Somers Clarke he brought out successively four volumes of the projected series. The brilliant excavations of the Egyptian Research Account at Hierakonpolis opposite El Kab are largely due to Mr. Tylor's initiative and financial aid. He was the son of Mr. Alfred Tylor, an old member of the Institute and nephew of our former President, Professor E. B. Tylor.

We have also to deplore the untimely death of Mr. ANTHONY WILKIN, who died from dysentery in the spring of 1901. During his undergraduate course Mr. Wilkin was invited by our President to take part in the Cambridge Anthropological Expedition to Torres Straits and New Guinea. Mr. Wilkin took most of the photographs for the Expedition, and besides assisting in making physical measurements of the natives, he made observations on their houses and on some of their customs. After taking a degree in the Historical Tripos at Cambridge in 1899, he spent a winter in Egypt with Professor Flinders Petrie. The following spring he went with Mr. D. Randall-MacIver to Algeria, in order to investigate the problem of the supposed relationship of the Berbers to the prehistoric Egyptians. That same autumn he published a popular account of this expedition entitled, *Among the Berbers of Algeria*, and early in the following year was published the joint memoir, *Lybian Notes*. During the winter of 1900-01, Messrs. Randall-MacIver and Wilkin undertook some archaeological work in Egypt, and as the latter was on the point of returning home he fell sick and passed

away. Thus was cut off a life full of promise. With great natural ability, good, mental training, and with an exceptionally wide experience in one so young, his friends confidently looked forward to a brilliant career in the furtherance of those objects which we all have at heart.

For election as honorary fellows of the Institute, the Council has selected the following:—

Dr. T. Brigham, Curator of the Bernice Pauahi Bishop Museum of Honolulu for his work on the ethnology of the Pacific; Professor Gustaf Retzius, of Stockholm, for his studies in the Anthropography of Northern Europe, and Dr. Franz Boaz, of the American Museum of Natural History, New York, for his researches in the anthropology of North-West America.

During the year under report, ending December 31st, 1901, nine ordinary meetings were held; three special meetings, and one joint meeting with the Folk-Lore Society. Following the precedent set in 1900, one of the special meetings was held on June 22nd at Park Hall, Great Bardfield, where the Fellows were hospitably entertained by Mr. and Mrs. Edge-Partington, and had the opportunity of studying Mr. Edge-Partington's valuable collection of ethnological specimens from the Pacific.

On June 19th the joint meeting with the Folk-Lore Society was held for the discussion of the Musquakie beadwork presented by Miss M. A. Owen to the Folk-Lore Society. This beadwork was further exhibited subsequently in the library of the Institute before its removal to the Museum of Archaeology and Ethnology at Cambridge.

The second Huxley Memorial Lecture was delivered on the 29th October, 1901, in the lecture hall of the Society of Arts, the Right Hon. Lord Avebury, D.C.L., LL.D., F.R.S., ex-President of the Institute, in the chair, in the absence of the President, who was travelling in the United States. The lecturer, Mr. Francis Galton, D.Sc., D.C.L., F.R.S., ex-President of the Institute, discussed "The Possible Improvement of the Human Breed under Existing Conditions of Law and Sentiment," a subject which has since provoked considerable discussion and drawn attention widely to a department of anthropological study of general interest and no small complexity. The Huxley memorial medal in silver was duly presented to the lecturer at the close of his address.

During the year under review, three half-yearly parts of the *Journal* have been issued, forming the whole of Volume XXX and the first half of Volume XXXI. The second part of Volume XXXI is in the press and will be published immediately. It will thus be seen that for the first time for some years, the publications of the Institute have been brought fully up to date. The sales of the current volume and of the back numbers continue satisfactory, and the total receipts from this source show an important increase on the average of the three previous years.

The publication of a monthly record of anthropological science under the

title *Man*, which was begun in January, 1901, has more than covered its current expenses, and on the whole has fully justified the expectations which were expressed in last year's report.

The compilation of the British section of the anthropological volume of the *International Catalogue of Scientific Literature* has made steady progress, and though the present schedule covers the department of Physical Anthropology only, the opportunity has been taken to make the necessary steps in Ethnography and the several departments not at present included in the catalogue, in view of the probability that it will be found necessary before long to revise and expand the schedule in the sense originally recommended by the council of the Institute.

In the library substantial progress has been made in dealing with arrears of arrangement and cataloguing. Two hundred and thirty-six volumes, including pamphlets, as against 180 last year, have been presented by authors and publishers, to whom the thanks of the Institute are gratefully tendered. The periodicals received in exchange for the *Journal* and for *Man* have risen in number from 109 to 130 (32 British, 15 Colonial, 83 Foreign).

The current binding is well in hand; progress has been made with the arrears in this department, and several imperfect sets of periodicals have been completed by the purchase of missing numbers. The collection of lantern slides shows steady growth, and the latter will no doubt be in demand for loan as soon as it is possible to circulate a printed catalogue.

The place of Mr. Thomas, who resigned his post of assistant secretary in December last, has been filled by the appointment of Mr. E. N. Fallaize, B.A., of Exeter College, Oxford.

TREASURER'S REPORT FOR THE YEAR 1901.

The income of the Institute for the year 1901 was £685 0s. 5d., being £150 9s. 6d. more than the income for 1900. The total of the subscriptions received was only £3 3s. more than in 1900, but there were no life subscriptions amongst them. The receipts from publications have increased from £63 19s. 5d. to £214 0s. 8d., three numbers of the *Journal* having been published in 1901, as against one only in 1900.

The expenditure during the year 1901 was £840 7s. 4d., against £588 7s. in 1900, and has exceeded the income for the year by £155 6s. 11d. Under this head an increase in salaries has been balanced by the discontinuance of refreshments at meetings; and an increase in postage and parcels, due to the publication of three numbers of the *Journal* instead of one, has been balanced by a diminution of miscellaneous printing and stationery; while an extra expenditure on advertising fills the place occupied in 1900 by the installation of the electric light. The increase of £252 in the total expenditure comes therefore almost entirely from the *Journal*, which has cost £457 9s. 1d. in 1901 as against £194 11s. in 1900. This sum of £457 9s. 1d. may be taken as the equivalent of the cost of the three

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

Receipts and Payments for the Year 1901.

RECEIPTS.		PAYMENTS.	
£	s. d.	£	s. d.
BALANCES, 1st January, 1901 :—			
Cash at Bank.....	105	5	7
Petty Cash.....	14	4	11
	119	10	6
Less balance of <i>Notes and Queries</i> Account.....			
	10	9	8
Less balance of <i>Man</i> Account.....	7	6	0
Less balance of <i>Summ</i> overpaid (since repaid).....	0	13	6
	18	11	2
	100	19	4
SUBSCRIPTIONS :—			
For the year 1901.....			
Arrears.....	401	2	0
For 1902 in advance.....	35	14	0
	16	16	0
	453	12	0
SALE OF PUBLICATIONS.....			
ADVERTISEMENTS in <i>Journal</i>			
Dividends for one year on Metropolitan Consolidated 3½ per cent. Stock (less Income Tax).....			
	213	4	8
	0	16	0
	17	7	9
“MAN” :—			
Balance as per last account.....	7	6	0
Cash received.....	80	16	8
Due to <i>Man</i> for copies for <i>Journal</i> , Authors, Exchanges, etc., and postage and Advertisements included in payments per contra....	119	12	4
	207	15	0
	102	18	9
	104	16	3
Less paid on account.....	10	9	8
	11	1	1
	21	10	9
“ANTHROPOLOGICAL NOTES AND QUERIES” :—			
Balance as per last account.....	28	2	3
Received during year.....	10	0	0
	38	2	3
	24	10	6
	13	11	9
	£925	18	6
LIBRARY :—			
Sales of Books from.....	85	11	2
Grant to, as per contra.....			
Less Purchases, Binding, etc.,.....			
	840	7	4
	79	14	4
	5	16	10
	£925	18	6

Examined and found correct,

(Signed) J. G. GARSON, }
 ROBERT W. FELKIN, } Auditors.

PRESIDENT'S ADDRESS.

WHAT THE UNITED STATES OF AMERICA IS DOING FOR ANTHROPOLOGY.

HAVING recently had the good fortune to pay a somewhat extended visit to the United States of America I have thought it might not be uninteresting to you to hear what our kinsmen and colleagues across the Atlantic are doing for the furtherance of Anthropology.

I crave your indulgence if my address appears more like a report than one of those general discourses which usually are delivered from Presidential Chairs. In the present instance it is true that "out of the fulness of the heart the mouth speaketh." I have been so tremendously impressed by the energy and enthusiasm of American anthropologists and by the liberality of enlightened business men who provide those opportunities for research of which the anthropologists make such good use, that I could not refrain from claiming your attention on this occasion to a brief record of their activity.

The means for the advancement of the science of anthropology fall under the following heads: (1) The collection of information in the field; (2) The publication of such information; (3) The collection of specimens; (4) The preservation of specimens; (5) The publication of museum specimens; (6) The instruction of students; (7) Independent investigation of collected material.

As no hard and fast line can be drawn between some of these activities, I shall deal first with the museums and with the field work undertaken by the more important institutions in the United States of America, and then very briefly with the teaching of anthropology in the United States.

I. Field Work and Museums.

It is a glory to the nation of the United States that it has recognized the duty of collecting information about the aboriginal Americans. The twenty or more Annual Reports published by the Bureau of Ethnology constitute a monument to the intelligence of the Government and of its departmental officials, Major Powell, Dr. W. J. McGee, Dr. Fewkes, Mr. Mooney, Mr. J. N. B. Hewitt, Dr. Jenks, Dr. Gatschet and others, of which their country may well feel proud. The contents of these volumes are so well appreciated by ethnologists that it is needless to refer further to them, except it be to add my thanks to those of the numerous other students who have benefited by the liberality of the United States Government.

Nor does the Bureau of Ethnology neglect the collection of specimens, as is evidenced by the very extensive collections transferred to the National Museum. I cannot however refrain from remarking that it seems very strange that the anthropography, or physical anthropology, of the native tribes, is entirely neglected by the Bureau, and I know that others share with me the hope that this state of affairs will be remedied.

No government in the world does so much for ethnology as does that of the United States; the annual expenditure of the Bureau of Ethnology is £10,000 (\$50,000) for salaries, field work, and for the writing up of the reports, including the preparation of illustrations. The cost of making the blocks for the illustrations, the printing of the reports, the binding and so forth, is defrayed by another institution, and it probably amounts to from £4,000 to £5,000 (\$20-30,000) per annum. Although two annual volumes are now being published it is well known that there is a large accumulation of manuscripts still awaiting publication. Is it too much to ask of the overflowing Treasury of the United States that these labours of American savants should be rendered available to their colleagues with as little delay as practicable?

The very extensive national anthropological collections are under the charge of the department of anthropology of the National Museum, which together with the Bureau of Ethnology, the Astrophysical Laboratory and the Zoological Park is administered by the Smithsonian Institution. The department of anthropology consists of the following divisions:—ethnology, historic archaeology, prehistoric archaeology, technology (mechanical phases), graphic arts, medicine, religions, history, and biography. For the sake of present convenience the archaeological collections under the curatorship of Mr. Thomas Wilson are placed in the building of the Smithsonian Institution, whereas all the remaining collections are arranged in the National Museum.

It is unfortunate that the anthropological collections of the National Museum are not more adequately housed. The building now accommodates three departments, geology, biology, and anthropology, but it appears that there is quite enough material on hand in any one of these departments to fill the entire building. Some of the cases in which the specimens are installed are also very unsatisfactory.

A great deal of the curators' time is taken up with preparing exhibits for the various expositions which are such a feature of recent American enterprise, and as a result the museum suffers considerably. But on the other hand, judging by what I saw at the Pan-American Exposition in Buffalo, that these exhibits are admirably planned and carried out, and they certainly were greatly admired by the visitors. In this way a knowledge of what the Government is doing is spread amongst a very much larger class of people than would be the case if the museum officials restricted their work to their museum duties. Further, Congress provides funds for these exhibits, all of which tend to increase the study of ethnology and eventually to enrich the national collections.

I saw the anthropological department of the National Museum under temporarily unfavourable circumstances. The fascinating Pueblo court was diminished and disfigured by the partitioning off of a considerable portion of its extent in order that a collection of Pueblo pottery might be unpacked, and the specimens catalogued and arranged. This was solely due to the fact of the insufficiency of workroom accommodation in the building.

The head curator of the department of anthropology, Mr. W. H. Holmes, is gradually working out his conception of what his museum should be, and a brief allusion to this may not be out of place. His object is twofold: (1) to illustrate the cultural history of mankind; (2) To demonstrate the distinctive characteristics of the various races and people.

1. Numerous series of objects have been installed to illustrate the progress of culture, such for example as the various stages of evolution from stone implements on the one hand to the most modern steel tools and engineering appliances on the other. In this work the curator has been ably helped by the veteran Otis T. Mason, whose writings on technology are so well appreciated by students. As the section on firemaking has been installed by Walter Hough, there is no need to certify to its completeness. An admirable land transport series has been got together, and one hall is devoted to a wonderful collection illustrating transport by water. There is also an interesting section devoted to comparative religions of which Dr. Cyrus Adler is the custodian.

2. Naturally the ethnology of the United States has received most attention from the officials of the National Museum, and there are rich collections illustrating the Eskimo, the North-West Tribes, the Plains Indians and the Pueblo culture area. Here, as is usually the case in American museums, the ethnology of Central and South America is poorly represented; the same remark applies to other parts of the world.

Mr. Holmes is in favour of arranging cases in the alcove system: that is, with long upright cases projecting at regular intervals from the wall cases. His ideal being to devote an alcove to an ethnic group, in the centre of each bay is to be a large quadrangular case containing a life-sized lay-figure group of a typical family of that people engaged in performing their most characteristic activities. These groups of manikins would give the casual visitor an accurate and vivid conception of the main characteristics of certain peoples. In a smaller case in the alcove are to be installed models of the typical habitations of that people. By mastering the accompanying descriptive labels of these two cases the visitor would gain a not inconsiderable knowledge of general ethnology. In the cases forming the alcove the student would find specimens fully illustrating the culture of the ethnic group. Several of the family groups of manikins are already prepared, but it will be impossible for Mr. Holmes to carry out his most admirable educational system until he has a new museum with suitable accommodation and cases.

In 1898 a collection of 2,206 human crania was transferred to the museum from the Army Medical Museum. This collection had been accumulating for

many years, and represents mainly the Indian tribes, ancient and modern, of North America; it is to form the nucleus of a division of physical anthropology in the anthropological department.

In the *Report upon the Condition and Progress of the U.S. National Museum during the Year ending June 30th, 1898* (1900, p. 24) Mr. Holmes deploras "the meagreness of funds for purchase has made it impossible to secure some of the most important collections offered, and as no provision is made for exploration and systematic expert collection, it is found that, save for the occasional well ordered collections donated or transferred, the acquisitions are fragmentary and lack the detailed data so essential to the student engaged in research." In the *Report* of the following year (p. 17) we read: "No systematic field work is provided for by the Museum, but limited funds are available for use when especially important results are promised." The same *Report* (1901, p. 65) contains the following statement by R. Rathbun, the assistant secretary of the Smithsonian Institution:—"The importance of giving early attention to the investigation of the ethnology and national history of the territories recently acquired by the United States was fully realized, but the lack of means has prevented any considerable inquiries in that direction."

The numerous memoirs and papers published in the *Annual Reports of the U.S. National Museum*, in the *American Anthropologist*, and elsewhere, testify to the industry and erudition of the members of the staff of the department of anthropology, and also to the recognition that the specimens placed under their charge are not merely to be preserved and installed, but, in the terms of the will of the noble Englishman who founded the Smithsonian Institution, are to serve "for the increase and diffusion of knowledge among men."

Originally the collections of the department of archaeology of the University of Pennsylvania were contained in the University library. Some five years ago they had grown to such dimensions that it became necessary to make suitable provision for their accommodation. The late Dr. William Pepper, then provost of the university and president of the department, initiated a movement which resulted in obtaining from the State of Pennsylvania and other subscribers a sum of money sufficient to justify the preparation of plans for a suitable and extensive museum building. The idea was to build it in sections, and the first portion was opened to the public on December 20th, 1899. Already this is overcrowded, but there is likely to be some delay in continuing the building, as a central dome must be erected before the much-needed exhibition galleries can be built, and there seems to be more difficulty in getting the requisite funds for an architectural feature than for the more utilitarian portion of the edifice.

The museum contains some very valuable and pleasingly arranged collections of Babylonian, Egyptian, and Etruscan antiquities, the first-mentioned of which are due to several expeditions sent out by the university under the direction of Professor H. V. Hilprecht and Dr. J. H. Haynes. The Egyptian collections have

been acquired mainly through Professor Flinders Petrie and the Egypt Exploration Fund. The Etrurian excavations were conducted for a period of three years under Professor Frothingham at the expense of Mrs. Phoebe A. Hearst and the Hon. John Wanamaker. Last year Miss Harriet A. Boyd excavated a Mycenaean city in Crete, the funds for which were provided by the Hon. Calvin Wells and Mr. Charles H. Cramp.

As the result of subscriptions raised by Mrs. Cornelius Stevenson, and owing to the liberality of Dr. Pepper and Mrs. Phoebe Hearst, archaeological collections were made in Peru by Dr. Max Uhle and by the late Frank H. Cushing among the keys of Florida. The same donors provided funds for collections from the Point Barrow Eskimo and for ethnographical material from Russia and Morocco.

Good representative collections of American ethnology and archaeology are being got together. On the recent Wanamaker Expedition, Mr. Culin, the director, collected a large number of objects from the western Indians. Of the special collections given to the university, mention need be made only of Mr. Sommerville's collection of gems, Mrs. Frishmuth's collection of musical instruments and the Furness-Hose collection from Sarawak; this collection, which has been presented by Dr. W. H. Furness, is second only to that in the Sarawak Museum in Kuching in giving a general view of the ethnography of the Raj. Dr. Furness, Dr. H. M. Hiller, and A. C. Harrison, junr., have also given other collections from the East to the museum. In the museum is also to be found Mr. Culin's very instructive and almost exhaustive collection of games, but unfortunately it is stored away in drawers. If this collection was adequately exhibited it would give to the museum a unique position among anthropological museums.

It is instructive to note that although this is a university museum, no support is received from the university, all the scientific work being prosecuted by funds raised from private sources, a result largely due to the enthusiasm of Dr. Sara Y. Stevenson, the energetic secretary of the department.

There is a good library which contains two very valuable collections of books on American linguistics; one was the library of Dr. C. H. Berendt, the other was that of Dr. D. G. Brinton both of which Dr. Brinton presented to the university shortly before his death.

Three volumes of *Bulletins* have been issued which not only give an account of the progress of the section of the museum concerned with ethnology and American archaeology, but contains original articles and numerous illustrations of recent accessions to the collections.

In 1869 a little band of public-spirited men was created by the Legislature "a body corporate by the name of 'the American Museum of Natural History,' to be located in the city of New York, for the purpose of establishing and maintaining in said city, a Museum and Library of Natural History; of encouraging and developing the study of Natural Science; of advancing the general knowledge of kindred subjects, and to that end of furnishing popular instruction and recreation."

A partnership, under sanction of the law, was entered into by the citizens of New York in their corporate capacity with the president and trustees of the museum, it being mutually agreed that the city should pay for the erection of the buildings, their maintenance and protection, while the trustees took upon themselves the responsibility of providing the exhibits, the library, the lectures and other means of instruction and mental recreation. This arrangement is perpetual and irrevocably binding on both parties. The following figures will prove how faithfully both parties have lived up to the compact, but they cannot indicate the cordial feeling that exists between the two bodies.

The cost of all the buildings and their equipment, from first to last, has been in round numbers £700,000 (\$3,500,000), while the sum expended for maintenance up to October 30th, 1900, was £194,400 (\$972,000). When the Hon. George C. Clausen (President of the Department of Parks of the City of New York) presented the new auditorium to the trustees on behalf of the city, he said, "in all these vast expenditures there have never been even a suspicion of party self-seeking or the slightest hint of the diversion of one dollar for a political or unworthy purpose. The city has cheerfully and liberally provided the buildings, policed and maintained them, but never in the slightest degree has it attempted to interfere with the management of the museum. It is only by holding firmly to this policy that our noble institution has progressed so marvellously in the past and will continue to progress in the future."

The large sum contributed by the city has not been sufficient to pay the running expenses of the museum, and nearly every year a deficit of £3,000 to £6,000 (\$15,000 to \$30,000) has been made good willingly by the trustees. It is true that this museum includes departments in various branches of geology and zoology as well as one of public instruction; but the anthropological department occupies nearly one-half of the exhibition accommodation, and it must be remembered that as yet only one quarter of the proposed museum is built.

So far as I can gather the museum disbursements for the anthropological department for the years 1898 to 1900 range from about £6,000 to £10,000 (\$30,000 to \$50,000) *per annum*, of which about £4,500 to £7,300 (\$22,500 to \$36,500) are spent in ethnological and archaeological field work.

The anthropological department of the museum has accomplished an unprecedented amount of research during the past year, a large sum of money having been received from private sources for the purchase of several important collections of American archaeology and ethnology and for the expenses of many expeditions in the field. Dr. B. Laufer, who has done some excellent work on the decorative art of the Amur tribes, has commenced what is intended to be an extensive research in South China. Mr. Marshall H. Saville is continuing his important excavations in Mexico (Loubat Expedition). Dr. J. R. Swanton has done interesting work among the Haida Indians. Mr. James Teit is continuing his studies among the Thompson Indians, and Mr. George Hunt has worked in Northern Vancouver Island. The archaeology of British Columbia is still being worked at by Mr. Harlan I. Smith.

The Californian Indians were studied by Dr. R. B. Dixon on the Huntingdon Expedition. Dr. A. L. Kroeber conducted the Mrs. Jesup Expedition to the Western Algonquin tribes. Mr. William Jones has studied the Sac and Fox, and Mr. H. H. St. Clair 2nd, the northern Shoshone tribes. Mr. E. Volk continued his researches in connection with the antiquity of man in the Delaware Valley under the patronage of Dr. F. E. Hyde; the museum explorations of the ancient Indian sites in the vicinity of the city of New York were again entrusted to Mr. M. R. Harrington.

The Jesup Expedition has continued its work with success. Seven expeditions have been, or still are, in the field, of which three are in Siberia. Mr. and Mrs. Bogoras and Mr. A. Axelrod have now returned, but Mr. and Mrs. Waldemar Jochelson remain to study the Yakut. It will be remembered that this expedition was organized in 1897 for the purpose of studying the past and present history of the tribes dwelling on the coasts of the North Pacific Ocean, beginning at Columbia River and extending as far as the Amur River. The generous patron of both the researches and their publication is Mr. Morris K. Jesup, who for the last twenty-one years has been president of the museum. Professor F. W. Putnam, the head of the anthropological department, undertook the organization of the scheme while the responsibility of the exploring and publishing falls to Professor F. Boas. In 1900 Mr. Jesup contributed over £4,200 (\$21,066) for the expedition. The principal part of the field work has now been brought to a close.

Various investigators, including Dr. Carl Lumholtz, have been connected with the Hyde Expeditions to Mexico and New Mexico. Dr. Ales Hrdlicka is at present engaged on his fourth expedition to study the physical anthropology of the natives of the South-Western United States and of Northern Mexico. His object, now more than half attained, is to ascertain the physical characteristics of the extinct as well as of the living peoples in that area which has once been occupied by the cliff dwellers and Pueblos, and by the Toltec, Aztec, and Chechemec peoples. I allude to this portion of the Hyde Expedition to show that somatology is not ignored in New York; indeed, in the museum there are large collections of human crania and complete skeletons and a great series of photographs and life masks taken from living Indians.

The museum is publishing a series of *Memoirs* giving the results of these and of other expeditions. Three numbers have appeared during the year and three more will soon be issued. It also publishes a *Bulletin* of which one volume containing anthropological papers has been issued during the year.

The following are the main features of the ethnographical collections. The North-West tribes are represented in a more compact manner than in any other museum in America. The Plains Indians are fairly well illustrated. There is a poor collection from the Pueblo Indians. The collection of Mexican antiquities is the best extant, one large hall being devoted to casts of Mexican sculptures and glyphs. There are extensive archaeological collections from other Central American countries. The archaeology of Peru is extremely well represented. The ethnology of Central and South America is almost unrepresented.

A number of specimens illustrating Papuan and Oceanic ethnology have been accumulated and the same may be said for Africa but to a less extent. Asia is scarcely represented and Europe not at all. None of these collections is arranged at present.

With the vast amount of material in the museum it is obviously very difficult to instal it properly, especially when each one of the staff is engaged on field work almost every year. The principle is adhered to that until a collector has completed his report no collection is provided with museum labels, as this necessarily takes a very long time, the result is that only a very small portion of the ethnological material is available for students. The specimens are visible, and that is all. In the course of time this will be remedied, but at the present rate of progress it will be very long before all the galleries of the museum are rendered really instructive to the intelligent visitor. Some sections, as for example the decorative art and other portions of the North-West collections, the casts of Mexican sculpture and the archaeological collection from the North-West coast, are installed in an admirable manner.

I cannot but endorse the statement in the thirty-first annual report—"Already the collections in archaeology, ethnology, and physical anthropology have placed the museum in the very front rank in anthropology, while in several of its sections it is far in advance of all other museums. In other sections it is still far behind in presenting the history of man and his works. While we should not curtail in the slightest degree any of the special work which, thanks to the patrons of the museum, the department is now so successfully prosecuting, we must hope and strive for the means of doing similar work in other regions. Now is the time to make our utmost efforts to collect in various fields. Every year is making both archaeological and ethnological research more difficult, and delay in the work means less results at greater cost."

The greater part of the anthropological collections in the Yale University Museum are archaeological in character, of especial note are the antiquities from Central America and the collection of Missouri pottery. There is a representative collection of European prehistoric archaeology. The foreign collections include specimens from Hawaii and the Philippines. There are several hundred human crania chiefly of American Indians, Hawaiians and Papuans.

Mr. George Vanderbilt is defraying the expenses of an expedition to Java by Mr. D. J. Walters of Newhaven who proposes to search for remains of *Pithecanthropus erectus*.

The Peabody Museum of Harvard University is already over-crowded and fresh collections are constantly arriving, which the curator, Professor F. W. Putnam, is forced to keep in boxes in the store rooms. The main collections are the results of the digging of mounds in the Eastern and Central States; thus the archaeology of that portion of America can be very well studied in the museum. During the years 1887 to 1893 the late Mrs. Mary Hemenway provided funds for archaeological and ethnological expeditions to the Pueblo Indians of Arizona and New Mexico.

The collections acquired by Dr. J. Walter Fewkes fill one gallery of the museum and the four volumes of the *Journal of American Ethnology and Archaeology* give an account of the very valuable results obtained in the field by Dr. Fewkes, A. F. Bandelier, J. G. Owens, Dr. Herman, F. C. Ten Kate, and A. M. Stephen. Among the few collections illustrating general ethnology, other than that of North America, those from Oceania are the most noteworthy. There is a large series of American crania.

By the assistance of a few patrons of science a large amount of original material for study has been accumulated during the past year. By the income of the Wolcott and Warren Funds the curator has personally examined the gravel deposits of California in connection with the antiquity of man on the Pacific coast, and has been able to direct one of his students in an archaeological exploration in New Mexico. By the contribution of a generous patron another student, Mr. A. M. Tozzer, was started by Professor Putnam on the study of the language and myths of the Navaho preparatory to research among the Mayas of Yucatan and other Central American tribes. At the personal expense of Dr. Charles Peabody, a graduate student of the department, an exploration was made by this gentleman, assisted by another student, of a mound and burial place in Mississippi. The expense of the museum field work in Yucatan, Chiapas, and Guatemala, as well as the museum publications during the past year, has been met by the Fund for Mexican and Central American Research, a subscription fund largely maintained by two members of the Museum Faculty. The Hon. Edward H. Thompson has continued his researches, particularly in the ruins of Chacmultan and of Chichen Itza. In the Usumacinta Valley Mr. Teobert Maler has made extensive explorations. Messrs. G. B. Gordon and Gorgonia Lopez made moulds of remains at Quirigua, as indeed have Messrs. Thompson and Maler. The collection of casts of Central American carvings and glyphs in this museum, already very extensive, is rapidly becoming of extreme value. Mr. H. M. Huxley has made an anthropological study of the Syrians. The assistant curator of the museum is Mr. C. C. Willoughby; he is also an Austin Teaching Fellow.

The publications consist of *Archæological and Ethnological Papers of the Peabody Museum* in 8vo. form, and quarto *Memoirs of the Peabody Museum of American Archaeology and Ethnology*; the latter up to the present date contain archæological papers only. Amongst other publications of the museum special reference must be made to the polychromic facsimile of a previous unknown Mexican Codex that Mrs. Zelia Nuttall discovered in Liverpool.

The history of the progress of Anthropology in Chicago is eminently characteristic of that typical American city. Towards the close of the World's Columbian Exposition in 1893 it was decided to establish a permanent museum. On October 26, 1893, Mr. Marshall Field gave one million dollars towards this object, and within a few months this fund had been increased by cash contributions to the extent of nearly half a million dollars more. The "Columbian Museum of Chicago" was opened by the director, Mr. Frederick J. V. Skiff, on

June 2nd, 1894, and on the 25th of the same month the name was changed to "Field Columbian Museum."

"The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science, and History."

The subjects embraced by the museum are geology, botany, zoology, and anthropology. Professor W. H. Holmes was the first Curator of the Anthropological Department, and he was seconded by Dr. Franz Boas and others. The nascent museum was fortunate in having the general trend of its future operations indicated by two of the ablest of the ethnologists in America. Dr. Boas resigned in 1894 and Dr. G. A. Dorsey was appointed assistant curator in 1896; when Professor Holmes resigned to return to Washington towards the end of 1897 he was succeeded by Dr. Dorsey.

There is no need to give a detailed history of the anthropological department of this museum as Dr. Dorsey has already done so in the *American Anthropologist* (N.S.), II, 1890, p. 247; but I will briefly indicate the main collections and their origin.

The anthropological collections which formed the foundation of the department were obtained through special expeditions sent out under the direction of Professor F. W. Putnam, or by collectors resident in the field, who were commissioned by the department of ethnology to undertake the work. A mass of interesting and valuable material from Alaska to Peru was thus accumulated; furthermore large series of anthropometric data were collected by Dr. Boas and others, all of which, unfortunately, have not yet been published. A few collections from other quarters of the globe were also obtained. The history of the museum since then has been one of almost unparalleled activity. Expedition after expedition has been sent out to collect ethnological and archaeological material in North and Central America; some of these have been paid for out of the museum funds, while others have been rendered possible by special donations from benefactors.

Mr. E. E. Ayer, who was president of the Board of Trustees till 1899, gave numerous and very valuable collections to the museum, mainly illustrating the archaeology of Egypt and Italy, the Etruscan objects being especially noteworthy, as well as a fine collection illustrating the arts and industries of the Plains Indians. Mr. H. N. Higinbotham, who succeeded Mr. Ayer as president, gave a valuable ethnological collection from Korea. From Mr. A. V. Armour and Mr. Owen F. Aldis have been received collections of Mexican antiquities. Through the generosity of vice-president M. A. Ryerson have been added Italian stone implements and Etruscan antiquities, a large collection from the Swiss lake dwellings, and several hundred European fabrics from the fifteenth to the eighteenth centuries. Mr. Clarence B. Moore has given archaeological specimens from Georgia and Florida, and a collection of over a thousand objects from prehistoric graves at Caldera, Chile, was acquired by gift from Mr. Cyrus H. McCormick. The three Hopi halls containing the large collection and the

wonderful groups and representations of shrines are due to the munificence of Mr. Stanley McCormick. This account could be considerably increased, but enough facts have been given to prove the liberality of private benefactors to the museum, most of whom are Chicago merchants.

This list does not include the acquisition by purchase of numerous ethnological and archaeological collections from America and various parts of the world, paid for out of the funds of the museum, which, as has already been stated, were largely due to the generosity of Mr. Marshall Field.

For the years 1895 to 1900 inclusive an average amount of £1,600 (\$8,000) was spent on field work, and in the purchase of collections. In 1901, £4,000 (\$20,000) was expended, and I understand a like amount is available for 1902. All curators are aware that the installation of specimens is very expensive, so it will not be without interest to note that for the three years ending 1901 there was a special appropriation for museum cases of about £8,000 (\$40,000).

The various scientific departments are temporarily lodged in one of the old exposition buildings. It is expected that the very necessary permanent structure will shortly be erected, and it is to be hoped that it will be near or on the present site of the museum, and not, as there is some talk of its being, in the centre of the smoky city.

The more technical aspect of the museum has been so well described by A. B. Meyer, that I need not dwell upon it.

I concur with Dr. Meyer in testifying to the value of the extensive collections of human skulls and skeletons. These consist mainly of American aborigines, but there is also a very respectable collection of Melanesian crania. Dr. Dorsey has installed a very instructive series of osteological specimens which clearly demonstrate not only those characters selected by physical anthropologists for classificatory purposes, but also the range in size and form of the bones and their various anomalies. Every facility, including the use of instruments and of a laboratory, is afforded to students. In the words of Dr. Meyer, "I have given so exhaustive an account of the physical anthropological collection because I am not aware that another so good is anywhere to be found, and this mention of it may lead to its being copied."

I may add that I found it easier to get a comprehensive survey of American ethnology and archaeology in the Field Columbian Museum than in the National Museum at Washington or in the American Museum of Natural History at New York; this I am quite willing to admit may be due to temporary disabilities in the latter institutions. The specimens in the Chicago museum are well displayed, not too crowded and, for the most part, well labelled. Indeed where the installation is practically finished, as in the Hopi collections, little is left to be desired.

The *Anthropological Series of the Publications of the Field Columbian Museum* have already reached a third volume. The papers are accounts of observations in the field, and are profusely illustrated with beautiful plates.

The most recent inauguration of anthropological activity is that displayed by the University of California. A department of anthropology was established by the Regents of the University in September, 1901. On September 20th Professor F. W. Putnam, the chairman of the department, in the inaugural lecture, outlined the purpose and scope of the new department and the methods of anthropological research. Miss Alice C. Fletcher gave the second lecture on the value of ethnological study; the third lecture, on the picture-writing of the ancient Mexicans, was by Mrs. Zelia Nuttall, and during the last week of November I had the honour of delivering a course of six lectures on primitive people, as exemplified by the natives of British New Guinea and Sarawak.

As an encouragement to others and as an expression of her great interest in the new department, Mrs. Phoebe A. Hearst, who is one of the Regents and a most generous benefactor to the University, has promised £10,000 (\$50,000) a year for five years for anthropological research. In this manner is struck the key-note of the new department. Research first and foremost. At present there will not be any regular system of instruction. Dr. A. L. Kroeber, Ph.D. in anthropology of Columbia University, has been appointed instructor in anthropology, and he is about to give a course on the languages, mythology, and life of the American Indians.

Mrs. Hearst for several years has been collecting a large amount of valuable anthropological material from the various expeditions she has subsidised, of which those in Egypt, Peru, and in California may be specially mentioned. Dr. G. A. Reisner with his staff is successfully collecting material and superintending excavations in Egypt, and we may soon expect the publication of the Hearst Medical Papyrus by Messrs. Granfell and Hunt. Professor A. Emerson is collecting Greek and Roman antiquities. Professor J. C. Merriam of the paleontological department is engaged on archaeological researches in California. His investigations range from the supposed Pliocene gravels to the kitchen-middens, with the object of determining when man first appeared on the Pacific Coast. Professor F. W. Putnam and Messrs. H. W. Furlong, W. J. Sinclair, and V. C. Osmont, have been associated with Professor Merriam in this work. For two years past Dr. Max Uhle has been excavating for Mrs. Hearst in Peru, and has amassed an immense amount of material. Dr. Kroeber has been making himself acquainted practically with the general ethnological problems of California, in order to direct research upon the more important and pressing lines. His work and that of Mr. P. E. Goddard, the Assistant in Anthropology, will be confined to California, and will be linguistic, mythological, and ethnological in its nature. Archaeology will not be undertaken, but they hope to do some work in physical anthropology in the future. Most of the work so far done by these two gentlemen has been in the north-west corner of the State, Mr. Goddard being already thoroughly acquainted with the Hupa. Dr. P. M. Jones also has spent nearly two years on archaeological work chiefly in the island of Santa Rosa.

Mainly through Mrs. Hearst's liberality materials have been accumulating for a university museum of anthropology. At present some 264 cases containing

museum specimens are stored in temporary building erected by Mrs. Hearst for that purpose, and about 250 more cases are on their way. The Alaskan Commercial Company has presented a most important collection from Alaska, and an exceptionally fine collection of Californian baskets has been given very recently.

There is already a temporary museum in the Park of San Francisco which contains a number of very interesting and valuable specimens; the archaeology and ethnology of the State of California are fairly well represented, the collection of beautiful California baskets deserves special mention.

We may look forward in the immediate future to the establishment of a really important museum on the Pacific Coast which, being under the jurisdiction of the University of California, will be the centre of considerable anthropological research and instruction. While Mrs. Hearst has earned the lasting gratitude of students of anthropology for her wise munificence, it is only fair to acknowledge that the success which has attended the nascent school of anthropology in the University of California is very largely due to the enthusiasm of Mrs. Zelia Nuttall, the erudite scholar of Mexican archaeology.

Now that the financial position of the Stanford University at Palo Alto is permanently secured, it is to be hoped that the claims of anthropology will not be overlooked. Already a beginning has been made towards an anthropological museum as Mr. T. Hopkins has given a collection of ethnographical objects from Korea and another illustrating Egyptian archaeology.

This is not the place to describe the points of interest in the various museum buildings, the installation of the collections and the details relating to museum administration and technique. It is the less necessary as Dr. A. B. Meyer of Dresden, who is a recognized authority on all matters pertaining to museums, travelled in the United States in 1899, and he is publishing a series of well illustrated reports on the institutions he visited. These reports are invaluable to all those who are interested in promotion or maintenance of museums and libraries, and it is to be hoped that no architect in the future will attempt to draw up plans for a new museum or library until he has consulted this work.¹

II.

THE TEACHING OF ANTHROPOLOGY IN THE UNITED STATES OF AMERICA.

In America courses of anthropology were established about fifteen years ago at Harvard University and at the University of Pennsylvania. It was one of the first subjects introduced into the curriculum of the University of Chicago. Seven or eight years ago anthropology was recognized in Columbia University in the city of New York. At the present time some thirty-three universities and colleges offer instruction in anthropology. It is found to be an adjunct of sociology in nine, of philosophy in five, of psychology in three, of geology and

¹ The two parts already issued are entitled *Ueber Museen des Ostens der Vereinigten Staaten von Nord Amerika*, Reisenstudien von A. B. Meyer; R. Friedländer & Sohn, Berlin.

zoology in five, and of medicine in one; while in five instances it is practically a faculty by itself.

Limit of space precludes my giving details concerning the instruction in anthropology in these numerous institutions, so I confine myself to a consideration of two of the universities where the teaching is most firmly established. Further information on this subject will be found in Professor G. G. MacCurdy's report on "The teaching of anthropology in the United States" in *Science*, N.S., vol. xv, 1902, p. 211.

Professor MacCurdy notes that a process of differentiation has already taken place in the larger institutions, which is destined to reach all at an early date. About four-fifths of those engaged in teaching some branch of anthropology are impelled to do so because of its important bearing on their particular subject, and because there is, at present, no one else to do it. They will probably be relieved of this additional burden by their own students, some of whom will specialize in anthropology and hold professorships where none now exist. This seems to be the normal line of development, and would of itself, in time, suffice to carry instruction in anthropology to every growing college and university in America. It is probable that this general forward movement will be accelerated by the example of other institutions; for example, a Department of Archaeology has been recently established with an endowment of £30,000 (\$150,000) at Phillips Academy, Andover, Massachusetts. There are two instructors and a collection of 40,000 specimens. It is evident, as Professor MacCurdy says, that "No institution of higher learning, worthy of the name, can long afford to be without advantages which can be had at a first class preparatory school."

I think it will be conceded that the anthropological teaching at Columbia University is the most complete in America, and therefore I present the syllabus in some detail. One great feature of the course of instruction is that advanced students are sent into the field. The advantage of this is obvious, and can scarcely be over-estimated.

The first year's study in anthropology proper consists of a general introductory course of lectures, essays, and discussions. During the first term Professor F. Boas deals with *physical anthropology and linguistics* on two afternoons in the week. This course consists of a description of human races, and of their distribution. The physical character of the earliest human remains and their relations to present forms are discussed, and types of languages and their geographical distribution are described. Dr. Farrand lectures on *ethnology*. A discussion of the mental development of primitive man is followed by a description of types of primitive culture and an inquiry into the origin and development of particular phases of culture.

Professor Boas on two mornings during the first year treats of *the statistical study of variation*. This course is intended as an introduction to the study of variation for students of anthropology, biology, and psychology. The characteristic features of variability and the methods of treatment are discussed.

Practical work on anthropological, biological, and psychological material supplements the lectures.

All students are expected to have taken both the foregoing courses, or to give satisfactory evidence of similar previous work before being admitted to the following courses.

Dr. Farrand conducts twice a week, lectures, papers, and discussions on *ethnology*. This course consists of a more detailed treatment of the questions involved in primitive culture, such as the origin and development of mythology, morality, religion, education, art, social customs, etc.

Prof. Boas has a class with laboratory work once a week on *physical anthropology*, including the characteristics of the races of man, influences of social conditions upon anatomical features, growth, etc. The collections and instruments belonging to the anthropological department of the American Museum of Natural History are accessible to students of this course. Advanced students who wish to prosecute more advanced study or to undertake research work, have every facility given them in the museum under the daily superintendence of Professor Boas.

The teaching of *North American languages* by means of lectures and discussions is conducted once a week by Professor Boas. Selected languages representing different types are discussed. Indian myths are translated in connection with grammatical interpretation. This course extends over two years, allowing time for the consideration of representative types of North American languages.

All the sciences under the faculty of philosophy come in touch with anthropology; this is especially the case with psychology. In Columbia University there is a very strong and well-organized school of psychology, and a somewhat extended course is obligatory on all students who specialize in anthropology. In the introductory course Professor Butler gives six lectures on the history of psychology and its relations to philosophy. Dr. Farrand gives eight lectures on physiological psychology. Professor J. McKeen Cattell gives eight lectures on experimental psychology. Dr. Thorndyke gives seven lectures on genetic psychology. Dr. Boas gives seven lectures on comparative psychology, including mental development of primitive man, language, speech and gesture, writing, ideas of number and counting, individual differences, mental and social development. Dr. Starr gives three lectures on pathological psychology, Professor Hyslop gives eight lectures on general psychology, and Mr. Strong six lectures on the philosophy of mind. Besides this very comprehensive course there are special courses for advanced students with practical work. The psychological laboratories are exceptionally well-equipped with apparatus, and special apparatus is provided, when requested for students undertaking special researches. When one considers the very intimate connection between psychology and various branches of anthropology, it is evident that the students of the latter science derive immense advantage from the lectures and practical work of department of psychology.

Sociology is inseparably connected with anthropology, and students of anthropology have the opportunity of learning the principles of sociology from Professor Giddings, and statistics and sociology from Professor Mayo-Smith. The course of lectures on racial demography by Dr. William Z. Ripley is of special interest and value, not only for its theoretical importance, but for the practical instruction in the preparation of maps, curves, and diagrams, and in various processes of mechanical reproduction.

An anonymous benefactor has recently given £20,000 (\$100,000) for the establishment of a department for the study of Chinese institutions, language and history.

The student who avails himself of his opportunities has exceptional facilities for becoming a thoroughly well trained anthropologist. If a criticism be permitted it would seem that archaeology and possibly technology are insufficiently represented.

Professor Cattell has somewhere stated: "As a department of anthropology in Columbia University will be of value to every faculty and school and of nearly every department, so the strength of Columbia University as a whole will build up a strong department of anthropology. There is an immediate need of students specially trained in anthropology, and more in America than elsewhere. Much of the material is disappearing, and haste must be made or it will be gone."

The two most important features of the teaching at Harvard, as in Columbia, are that the students are brought directly into contact with the data of their studies by means of practical work in the laboratory and museum, and later by means of field work. Reference to original papers is encouraged by the students having to conduct discussions, and to write reports on various aspects of anthropology. There is also a first rate library and an active Anthropological Club which is mainly for the purpose of discussions. The prosecution of research is further encouraged by the Thaw and the Hemenway Fellowships and by the Winthrop Scholarship. The Thaw Fellowship is held by Miss Alice C. Fletcher. There are at present about fifty-five students attending the courses at the museum. The instruction is given by Professor F. W. Putnam, Dr. F. Russell, Dr. R. B. Dixon, and Dr. J. H. Woods.

Anthropology is also advanced in America by the labours of many individuals who are not definitely attached to any institution, such, for example, as Mr. Clarence B. Moore, E. S. Morse, Dr. Carl Lumholtz, Miss Mary Owen, who has been a benefactor to the Folk-Lore Society, and the Duc de Loubat, who has at great personal expense reproduced in facsimile, six ancient Mexican codices and two previously unedited Mexican manuscripts. In this manner he has rendered it possible for students to make a comparative study of these invaluable and practically inaccessible documents.

There is no need for me to call attention to that most excellent journal *The American Anthropologist*, or to the valuable *Journal of the American Folk-Lore Society*. Besides popular books bearing on anthropology, the magazines and journals

constantly publish illustrated articles on various branches of the subject which cannot fail to awaken an interest among the general public and, as a sign of the times, one very frequently finds interesting illustrated articles in those remarkable examples of newspaper enterprise, the Sunday editions of the great daily papers.

Nearly every museum possesses a lecture room at which weekly popular lectures are given on subjects more or less connected with the exhibits.

The Anthropological Society of Washington, the Ethnological Society of New York, Section H of the American Association for the Advancement of Science, the Anthropological Clubs connected with various universities and similar societies, are additional means for the dissemination of anthropological knowledge, not only among students but also among the intelligent public.

It would be impossible to include within the limits of a brief address an account of all the work that is being done in anthropology by the Government, by public and private institutions, or by individual effort in the United States of America. Much as I should have liked to have emphasised the interest exhibited in the subject and the wonderful activity that is being displayed, the bare enumeration of all this activity would make a very weary chronicle.

I must confess that I felt a not inconsiderable amount of envy when on every hand I witnessed this energy and then recalled the apathy which pervades our own country.

The American public is more intelligently alive to the interest and importance of anthropology than is our public. The exponents of the science are energetic, enthusiastic and competent, and they succeed in gaining the practical sympathy of wealthy merchants, who are not averse from spending money freely when they see that the money will be wisely spent for the good of the state or of the city. One cannot say that the wealthy Americans are more intelligent than are our rich men, but they do seem to appreciate the value of learning to a much greater extent than do ours. At all events they respond more readily to the very pressing need there is for the endowment of research and of those institutions which bring the knowledge of the expert down to the comprehension of the masses.

I am quite willing to admit that the fault in this country may lie as much with the specialist as with the capitalist. In any case we have an inspiring demonstration in the United States of America of what can and should be done in Great and Greater Britain, and I venture to thank our American colleagues in the name of Anthropological Science for this good example of strenuous effort and praiseworthy accomplishment.

FURTHER NOTES ON THE MANNERS AND CUSTOMS OF THE BAGANDA.

BY THE REV. J. ROSCOE, C.M.S. Uganda.

[WITH PLATES I, II.]

THE writer offers these notes to the Institute as notes not as a complete record of any custom; it is hoped they will clear away much surface matter and prepare the way for more detailed work which he hopes will follow. The Baganda, as the people who live on the western side of the great inland sea Victoria Nyanza are called, are negroids, and their language is of the Bantu family. By inter-marriage with women from other tribes, especially with the Baima of Busalaga, or as they are more frequently miscalled, the people of Nkole, the type of feature has been greatly improved. The heavy, unintellectual negro type is not nearly so common as in many other parts of Central Africa. They are a well-built race, many of them are over six feet high, graceful in figure and movement, and quick to learn. The latest Government statistics give their numbers as one million; but so far as I am aware no reliable census has been made, and I am inclined to regard this as being below the true figure.

It may be well at the outset to say *Ba* stands for people, *Bu* for the country, and *Lu* for the language, and *ganda* the root which takes any of the foregoing prefixes. Buganda proper extends from $1\frac{1}{2}^{\circ}$ north of the equator to 1° south, and long. 33° to 31° . There are conflicting traditions as to the origin of the name of the country; one says a king of that name called the land after himself, but as there is no record of his mother among the clans this legend is rejected by the people; another tradition says it is the name Kintu, their ancestor, gave to his bundle which he brought with him to the earth, and the spot where he put it to use it as a pillow on his arrival upon earth took the same name, and afterwards the whole country was called Baganda.

According to their traditions they have an unbroken chain of kings for twenty-two generations; they trace their descent from Kintu, who came from Katonda, the supreme being. The accompanying genealogical tree will enable the reader readily to grasp the idea of their origin.¹ (Plates I, II.)

Kintu did not die a natural death but fled away into the forest, where he secreted himself. It appears his wife Nambi misconducted herself during the absence of the king, and Kisolo the steward did not tell Kintu directly he returned. Somehow the king heard about it, and being exceedingly angry he sent

¹ The lists of kings of Uganda given by Stanley in *Through the Dark Continent*, and Wilson in *Uganda and the Soudan*, agree with this table. Stanley gives two different names in his list; but, as many kings had three and four names, it is remarkable only two names should differ.

for Kisolo, upbraided him with neglecting his duties, and in his anger struck him. Kisolo fled, but only to die from the wound he had received. Later on Kintu repented of his harshness to the steward and sent for him, but learned that he was dead. This was the first murder, and it so affected the king he ran away into the forest and could not be found. The chiefs then sought to make Mulanga king, but he refused the throne, and also fled away and was never discovered.

One of the people who came to the earth with Kintu was Bukulu with his wife Wada (*see* chart). They were the parents of the *Lubare* or gods. To these *Lubare* the people resort with offerings in time of joy or sorrow, trial or difficulty, but always through the medium of the recognized priest.

Another person of note who came with Kintu was Kyejo or Walumbe; he is the origin of all evil and death. He was never intended to come to the earth by the supreme being Katonda, who had given explicit instructions to Kintu to avoid him.

Kintu's other companions who came to the earth with him do not appear to have done anything remarkable, but left their names to tracts of country which are still the names of districts of Uganda.

The information contained in these papers has been gleaned directly from the people, the *Katikiro* (prime minister) having assisted the writer to obtain it in every possible way.

The story of Kintu's coming to the earth.

Katonda called his grandson Kintu and told him he was to proceed to the earth to live; he gave him a wife named Nambi Natutululu, and also one seed of each kind, and one tree of the kind necessary for food; and cattle, a cow, a goat, a sheep, and a fowl. A parting feast was given, and Katonda told Kintu to make an early start next morning and not allow Walumbe his brother to know anything about the journey, because he would be sure to do them some harm. He further admonished him not to return, not even to take any of his things if he forgot them. Early the following morning they set out, successfully eluding Walumbe. On the way, after travelling some distance, Nambi discovered she had left the *bulo* (a small grain for the fowls) behind in the doorway of their house. She told Kintu and said she must return; he expostulated in vain, reminding her of his promise to Katonda; she returned, snatched up the bundle of grain, but as she was hurrying back to rejoin her husband, Walumbe met her, and asked, "where are you going so early, my sister, and why are you leaving me behind?" her efforts to shake him off were useless, she had to return to her husband accompanied by him. When Kintu saw Nambi coming with Walumbe he rated her soundly, but he could not rid them of their brother's presence, so Walumbe went with them to the earth. When children were born to Kintu, Walumbe killed them, whereupon Kintu tried to catch him to put him to death. Walumbe then fled into Singo, and took up his abode in a deep ravine called Ntanda. Kintu took up his abode on the shore of the Lake Victoria, a little to the south of the Government headquarters Ntebe, and from there he extended his kingdom into all parts of Uganda, and on to the islands of the lake.

In the genealogical chart, under the name of each person has been given, so far as possible, the *Muziro* (totem); the others are left because the mother is uncertain. It is remarkable in Uganda, royalty follow the *Muziro* of the mother, whilst the common people follow the paternal *Muziro* (totem). Two or three other people in the chart are worthy of a little further notice. King Tembo is said to have placed his son Kigala and his daughter Nazibanja in one of the *Lubare Masabo* (house of a god), in recognition of some benefit. After some months it was found Nazibanja was with child by her brother. The king was greatly annoyed because the old customs had been broken; he ordered the removal of his daughter to a distant part of the country, away from her brother. On the way to her new home she gave birth to three children in different places; at each place a river sprang up, and also at the places where the placenta of each child was deposited; these rivers are the six principal ones in Uganda. Wampamba, another prince, married his sister, and was in consequence rejected by the people upon the death of his father. Later on royalty took their sisters into their harems, and it became illegal for princesses to marry any one but the reigning monarch.

One other person deserves notice, Prince Kayemba of the Mamba clan. He was warned not to marry a woman named Naku whom he loved; he refused to listen to his advisers and took the woman to wife. The outcome of the marriage was the birth of a son Kaumpuli, who had neither arms nor legs. This child is said to be the cause of all the bubonic plague.

Totems and Clans.

Totem or Muziro.	English Equivalent.	Remarks upon the clans which take their names from their totem.
<i>Ngo</i>	Leopard.	
<i>Mpologoma</i>	Lion	Royal drum makers.
<i>Ngeye</i> .		
<i>Ngonge</i> ....	....	Royal brewers and bark cloth makers.
<i>Naenene</i>	Small green locust.	
<i>Fumbe</i> ....	....	This clan administered the poison ordeal to any who appealed to it from the king's judgment.
<i>Njoru</i>	Elephant	Royal herdsmen.
<i>Mumba</i>	Large fish	Canoe builders.
<i>Butiko</i>	Mushroom	Caretakers of the throne and dance before the king.
<i>Lugave</i>	Kind of lizard	Royal drummers and support the king's chair; they also try any charges against princes.
<i>Ndiga</i>	Sheep	Katambala is a chieftainship given to this clan.
<i>Mbogo</i>	Buffalo	Personal attendants upon the king wherever he went.
<i>Nkima</i>	Small grey monkey	This clan held the office of Mugema; they placed the king on the throne, and were called king's father.
<i>Mpevo</i>	Antelope	Held the office of Kibare, who represented the king when he was away from the capital, and also tried any charge against the king.

Totem or Muziro.	English Equivalent.	Remarks upon the clans which take their names from their totem.
<i>Kati-nyuma</i> ....	.....	Held the office of Katikiro.
<i>Ngonyi</i>	Birds	Said to have come with Kintu to guard his fire and be doctors.
<i>Musu</i>	Large edible rat	Guards of the royal w.e.'s and spies on the army to let the king know its movements.
<i>Kobe</i>	Kind of monkey	Takes charge of the lower jaw bone of dead kings.
<i>Mpindi</i>	Kind of bean.	
<i>Ngabi</i>	Antelope	Claims to be of royal blood, and wear brass and copper anklets as do royalty.
<i>Bugeme</i>	Beer from wild date palm.	
<i>Musa</i>	Dog	Formerly guards of the dowager queen.
<i>Kiba</i>	Fox	This class came originally from Bavuma.
<i>Nvubu</i>	Hippopotamus	Said to have come with Kintu.
<i>Ntalaganya</i>	Small gazelle with head like a cow.	Guardians and drummers of the royal drum, Nakawangrizi.
<i>Njasa</i>		
<i>Nkeje</i>	Small fish like sprat.	
<i>Kasimba</i>	Small wild cat.	
<i>Byendabya nyama</i>	Entrails of animals.	
<i>Nte eyazalibwa nga teriko mukira</i>	Tailless cow.	
<i>Nte ya lubombwe.</i>		
<i>Nganga.</i>		
<i>Mari ga kisasi</i>	Rain drops from a roof	This class may not wash with any water caught from a roof, or eat any food which has been cooked with it.
<i>Namungona</i>	Crow.	
<i>Kinyomo</i>	Ant with red body.	
<i>Kobe</i>	Kind of monkey.	
<i>Kitete</i>	Kind of grass	They may not cut any grass or in any way injure it.
<i>Kiwugulu</i>	Owl ?	
<i>Kanyonyi akabira munte</i>	Small bird which cries among cows.	
<i>Mutima</i>	Heart of any person or animal.	
<i>Ngali</i>	Golden-crested crane.	

Clans.

In the above list are the clans or *Bika* of the Baganda with the English equivalent of each *Kika* so far as it has been possible to obtain their names. In the column for remarks will be found what appears to be an undeveloped system of caste. It is clear in past time people of certain *bika* (clans) were allotted their special work for, or about the king. To understand the office of supporters of the king's chair it is necessary to be a little more explicit. One of the kings named

Mulondo was only a child when he came to the throne, so in order to enable all the people in court to see him, a wooden chair or throne was made upon which he was placed during any gatherings of the court, instead of sitting on the royal lion or leopard skins on the ground as his forefathers had done. It was then feared the seat might topple over or give way, or his majesty might fall from it; a couple of men were therefore appointed to sit on each side and support the throne. This office is still maintained, and the throne is called Namulondo; it has other guards to protect it from desecration when not in use.

The people of a *kika* are known by their names, each has its own distinctive form, though there are a few names common to the *bika* (clans).

No person of a *kika* (clan) is allowed either to kill or eat their *muziro* (totem), though any one of another clan may do so with impunity. Any infringement of this custom will be followed by sickness, sores all over the body, or even death.

The origin of the *bika* (clans) cannot be ascertained with any degree of certainty. Old people affirm their fathers found some things injurious to them either as food or to their personal safety, and made their children promise not to kill or eat that particular thing.

No one mentions his *muziro* (totem), but asks some other person present to give the information when it is necessary to make the totem known.

Each *kika* (clan) has its special drum beat. In Uganda the drum is an indispensable instrument, it is a musical instrument, it peals forth the news of death, of birth, of joy, of war; to its sound the feet of the pedestrian are kept going, burdened porters are encouraged to press forward by it, and chiefs are known in the distance by the beat of their drums. In short, it is to Uganda what the telegraph is to England.

No man may marry into his mother's clan (*kika*), because the members of it are all looked upon as sisters of his mother and *banyina bato* or *bakulu*, little mothers or great mothers according to their age.

Each clan has its own special part of the country where the dead are always buried. For sympathy in trouble or assistance in any time of trouble or when pecuniary aid is needed the member of a clan always turns to his own particular *kika* (clan).

Birth.

When a woman conceives, all sickly or delicate children are kept from her, and she is surrounded by strong healthy ones. She continues to fulfil her usual duties in the house, and cultivates her garden, but is careful not to overtax her strength. She is not allowed to eat salt, either mineral or vegetable.

No food baked in hot embers.

A kind of bean (*Buindeinde*).

Yams.

Sugar cane.

Gonja, a kind of banana.

Matungula, a red pod which grows upon reeds in the swamps, very acid in flavour.

Mbogo, a kind of spinach.

Mpafu, a fruit not unlike a damson in appearance.

Njaye, a small wild tomato, very acid.

Should she eat any of these, the child may be still-born, or be a delicate scrofulous one.

If the woman is the wife of a chief she lives away from her husband in a house set apart for her accouchement, but peasants with only the one wife continue to live with them. In the case of a chief's wife the house is surrounded with a strong reed fence, the gate guarded, and no one admitted but relatives or privileged friends. A few days before the confinement takes place the lower parts of the body undergo a daily process of massage; for this butter is freely used. Should the event take place by day the woman is delivered outside in the little courtyard; but if by night, in the house. The woman stands holding on to a post, which has been firmly planted in the ground, and is delivered from behind. A child born with feet presentation is called *Nakimu*, a term of reproach; should it be still-born, or die in infancy, it is buried at four cross roads, and thorns are placed upon the grave. Every woman who passes by throws a few blades of grass upon the grave to prevent the ghost from entering into her and the child being reborn.

In the case of cross birth it goes hard with the woman, she rarely recovers. These cases are attributed to adultery, and the woman is made to confess her guilt and to give the name of the man who has brought her into trouble.

If the woman is the wife of a chief, or any important person, and her first-born child is a son, the midwife strangles it, and reports it still-born. This is done to insure the life of the father; if he has a son born first he will soon die, and the child inherit all he has. Should the child be a delicate one, or have any skin disease, the cause is attributed to the mother having partaken of some of the *tabu* foods. The relatives of the father, who are among the first to visit the mother, examine the child and promptly accuse her for breaking their customs if they find any traces of disease upon it; in some cases they go so far as to flog her for having done so. Directly the child is born, if it is a boy, a spear is placed in its hand, if a girl, a knife, such as women use for household duties, is put in its hand. The placenta is buried among the plantains with the same care a child would be. A portion of the umbilical cord is carefully preserved by the mother for the naming of the child, *kuraculula omwana*.

For the first few years of its life a child wears no clothing beyond a few charms, a girl wears also a waist ring made from the fruit stem of the plantain, and covered with the skin of the water lizard. The child's hair must not be cut until it has been named, and should any of it be rubbed or plucked off accidentally, it is refastened to the child's head either by tying it with string or knotting it to the other hair. The child has its special nurse, *omulezi*, to take care of it, usually a girl of some twelve or fourteen years of age. The baby is washed each day in a

bath made of a plantain leaf and afterwards well rubbed with butter. During its first two months it may not sit upon the floor; at the end of that time the grandfather comes in the early morning and puts it to sit on a bit of bark cloth near the door; there is then a small family feast.

The mother remains in seclusion for six months, and no one may take or even touch her child but relatives. Peasants with only one wife are unable to observe this rule, so the mother returns to her household duties directly she is able to do so. A mother nurses her baby for quite two years; it is however, also fed with cow's milk and bananas which are cooked.

Kwcalula Omwana. (Naming the child.)

At the age of about two years the child goes through the ceremony of having its legitimacy established, and is also named. There are usually three or four children from various families brought together to undergo this ceremony. The relatives come together and have a feast, but the mothers are not allowed to partake of this until after the ceremony of testing the legitimacy of the children is concluded. They sit apart from the rest and are distinguished from the other women by a girdle of plantain fibre worn round the chest. The children who are to go through the ceremony are made to sit on mats near the door of the house. A vessel containing a mixture of milk, beer, and water is brought, and each mother in turn brings out the bit of the child's preserved umbilical cord and drops it into the mixture. If the cord floats the child is universally proclaimed legitimate. Should it by chance sink the child is declared illegitimate and the mother is loaded with abuse and flogged. The paternal grandfather of the child, or if he is dead, a chosen representative of the clan, goes through the names of the child's ancestors on the paternal side. When this is done a strong girl, the relative of one of the children, comes forward. One of the children is put on her back and clings to her with its legs round her waist, and its arms passed under hers at the armpits and the hand gripping the shoulders. The second child is placed in like manner on the first child and the third to the second. When thus arranged the grandfather takes the vessel with the mixture and pours a little over the heads of each of the children; they are then reseated on their mats. The mothers next sit down with their legs together extended in front of them, and they have some of the mixture poured over them. The grandfather takes some food made from banana flour, and two small fishes, in a bit of plantain leaf which was previously dipped in the mixture. He goes and kneels at the mother's feet holding the bit of umbilical cord in his right hand if the child is a boy, in the left if it is a girl, and the food in the other hand. He puts his right hand upon her left leg and his left upon her right leg and again goes through the list of the child's ancestors; as he mentions each name he moves his hands up higher and higher until with the last name he reaches her mouth; the mother eats a little of the food and of the fish. The bit of the umbilical cord is then given to the mother, who either places it in her house or deposits it in her garden among the plantains; if the child is a male it

is put to the kind used for making beer, if a girl to the kind used for vegetables. The women go and draw water for the house and cook more food for their feast, which takes place in the evening after sunset. Next morning the grandfather names the child; he gives it the name of one of its ancestors but never its father's name; the child's head is shaved and the ceremony ends. With royalty the name of the great-grandfather is given to the eldest son; peasants do not follow this custom, but take the name of some renowned relative. The spirit of the deceased relative enters the child and assists him through life.

Adoption.

When the child is weaned it is sent away to some friend or relative who adopts it, and brings it up as his own child. The mother then suspends a needle from her neck between her breasts; this is said to prevent her breasts from swelling or other evil consequences ensuing from the child being weaned. The child is taken away to the friend without any demonstration, in fact it is kept as secret as possible. The reason for adoption is to ensure the safety of the child. Should the father incur the displeasure of the king or his superior chiefs his goods and property might be confiscated, and his wives and children go into slavery, or if he incurred a debt his children were liable to be seized.

Women subject to miscarriage or who bear still-born children wear fetishes to protect them; these are transferred to the child directly after birth.

Children have small bells strung round their ankles and wrists directly they begin to crawl; these are kept on until they can run about, that is till about three years of age.

The Birth of Twins.

When a woman gives birth to twins the midwife is not allowed to go home until the propitiatory and thanksgiving ceremony to Mukasa, the god of plenty, has been completed. Should circumstances prevent her from staying the full time she is given a female goat and allowed to go.

No announcement is made of the birth of twins, nor is the word twins mentioned until the rejoicings are over. Should any refer to their birth it is believed the children will die.

The father is called Salongo, the mother Nalongo, and the children Balongo. If the birth takes place during the day, both the mother and children must remain outside until the father goes to the *mandwa* (priest) whom he consulted when his wife conceived. He takes with him nine cowrie shells and one seed of the wild banana; these are the token which inform the *mandwa* (priest) twins are born. The Mandwa consults the oracles and tells the father the result; he instructs him how to act, to take the children into the house, and call a friend to come and act as Mutaka. The office of Mutaka is an important one; he has to fasten the door of the house in which the mother is, and make openings at the back for her to go in or out; he also undertakes other important duties for both parents; he incurs risk of divine displeasure should anything go wrong with the children.

When *Salongo* calls his friend to accept this office, the man will not accept it until he too has seen the priest and received his sanction.

Salongo next takes an offering to Muanga, the chief priest of Mukasa, as a thank-offering for the great favour shown him in giving him twins. On his return home he rests two days, afterwards he goes to his father, or in case his father is dead, to his heir, to announce the birth of the twins. As he is not allowed to use the word twins, he takes two common knives such as are used for household purposes, if the twins are both boys; if they are girls he takes two *nkato* (pads used by women to put on their heads when carrying water pots, etc.); if they are a boy and a girl he takes one knife and one pad and presents them to the priest. These are the tokens which indicate the birth of twins and their sex. The father gives the son two relatives to go back with him, one a man who takes the name *Salongo muto* (little father of twins), the other *Lubuga* (sister of the prince). *Salongo* takes them home, but does not see his children until he has been to his wife's parents, and has been given a bark cloth for his wife, and also another *Lubuga* (sister of the prince).

These duties being fulfilled he goes to the *Mutaka* and tells him he has secured the *Salongo muto* (little father), and the women to be princesses or sisters to the prince, and all is ready. The *Mutaka* returns with him, turns the sliding door on to its side across the doorway to prevent anyone entering the house that way, and thus converts the door into a window. Two holes are cut in the back of the house to be used as doors, one for men the other for women. A reed partition is put up to divide the hut into two parts, one exclusively for the women, the other for the men: in the men's part a number of drums are placed and an incessant drumming is kept up day and night, whilst dancing goes on among the women. A reed fence is built round the house to keep off all outsiders, and a gate keeper guards the entrance and only admits relatives. The *Mutaka* waits until the evening, when he is given the placenta of each child, which he takes to some uncultivated spot near, and puts them into a couple of earthen pots and leaves them there. His duties are over for the time so he is given a goat, a bark cloth, a knife, and a hoe by *Salongo* (the father of the twins), and goes home.

The placenta of a prince is always preserved; it is called the *mulongo*. It has power to kill the offspring of royalty if not respected and treated with honour. Kings therefore always keep their placenta and have it decorated and treated as a person; it is confided to the care of the second greatest earl. After death it is placed in the tomb with the *Lwanga* (jaw bone).

When these arrangements are complete *Salongo* goes stealthily to the *Mutaka's* garden and cuts a flower from one of the plantains, and wraps it up in a grass ball and brings it home, and puts it in the doorway which now forms the window. His hair is then cut, *majoba*, that is, each side is shaved leaving a ridge on the top which comes to a point at the forehead and at the back of the head; he also wears on each ankle a number of small bells which tinkle as he walks. It is necessary he should be thus marked to prevent anyone from molesting him

as his person is inviolable. As *Salongo* he is privileged to enter anyone's garden, and takes the produce at will, to feast his guests. At the end of a month *Salongo* calls together his relatives and sends them to bring bunches of palm leaves to be strewn on the ground in front of the house for a public dance. He himself takes some dry plantain fibre and makes a round of visits to relatives and friends, and throws some of the fibre in the doorway of their houses. This is called *Kakokobe*, and is a notice that a dance will be held there in the near future. Those friends or relatives thus honoured take presents of plantains or cowrie shells to the *Nalongo*.

The dance is called *Bukokole*, and at each *Salongo* and *Salongo Muto* wear crowns and *Nalongo* a girdle round the chest; they are made from a creeper called *Sanigo*. When the new moon appears the priest of *Mukasa* orders a feast. The animal, a goat, has to be killed, cooked, and eaten by night. The feast is called *Mugerengeje*, and no one who has committed adultery may partake of it.

Directly the feast is over *Nalongo* is taken to *Galama* (lie down). At the feast and at this ceremony only the relatives who have been residing in the house during the month are permitted to be present. The spot for the *Galama* ceremony is chosen during the day; it must be in the tall uncultivated grass a little distance from the house. To this place the party proceed with torches to light the way for *Salongo* and *Nalongo*; upon arrival they trample down the grass and form a circle; each person stands looking outwards. *Salongo* leads his wife into the circle, strips her of her bark cloth, which he spreads out upon the ground; she lies upon this on her back, and takes the flower of the banana which they have brought from the doorway, and places it between her legs. *Salongo* then kneels down and with his penis knocks this away. When he has done so the people round utter a shrill cry of "Eh! Eh! Eh!" and the drums strike up. They dress, return home and continue the dance there all night. The *Mutaka* comes in the morning, kicks down the door, and thus opens the house again. *Salongo* next brings out four large drums and three small ones and the public dances commence.

These dances are for women only; the men take no part in them beyond beating the drums and looking on.

When the round of visits has been paid, and the dancing ended, *Salongo* remains at home until the next war expedition, and until then he is not allowed either to dress his hair or cut his finger nails. When the expedition is announced his whole body is shaved and his nails cut. The nail parings he ties with the hair from his body up into a ball and takes with the bark cloth he wore at the dances, and joins the expedition. When he has killed one of the enemy he crams the ball into his foe's mouth and ties the bark cloth round his neck and leaves them there on the battle-field. It is called the *Lukanda lwe Banyoro*. Most of the punitive expeditions for years have been against the Banyoro; they were the only people able to withstand the Baganda forces. Upon his return home *Salongo* gives the children their names (*Kuwatula abana*), and has another feast. At this feast, either a goat, or for poor people a fowl is killed, and must be baked

whole in hot embers, without being dressed. An effigy of each child is made and called the *Mulongo*; it consists of:—

A plantain flower.

The tongue of a white fowl.

Mpeke and Nsiinda (a seed from the wild banana and a small stone).

A ball of mud.

The umbilical cord.

Eighteen strips of bark cloth (two sets of nine, the sacred number).

These are wrapped in a bark cloth to represent a figure.

When the effigies are made *Salongo* with his wife *Nalongo* goes to his father and tells him he has fulfilled the *Lukanda lwe Bunyoro*, and wants to be free to go about. The father usually gives a handsome present of two cows, two women and two goats to his son on this occasion. Upon the receipt of the present *Salongo's* father opens his door, which he has up to this time kept shut against his son, and spreads dried plantain fibre in front of his doorway. In the evening *Salongo* leads a goat to his father's door and drives it in, but does not enter himself; this animal the father at once kills and eats. The next morning the father takes a piece of white earth, mixes it into paste with water and sprinkles some of it over *Salongo*. *Salongo* then sprinkles some over him and together they sing a number of songs. When the songs are ended they go into the house, and have food together; the father takes a little of his food and gives it to his daughter-in-law, *Nalongo*, who must partake of this meal with them; she also gives her father-in-law a little of her food. This ends the *Lukanda*, and frees *Salongo* to go about as before the birth of the twins. His first visit is to the king to tell him about the twins, and how he has completed all the ceremonies. It is customary for the king on this occasion to give him a large gourd of beer to drink in the court grounds with his friends.

The Lukanda of a Chief.

When a chief's wife has given birth to twins, the chief takes the king a present when the ceremonies are completed. The king meets him outside the enclosure of the palace, and *Salongo* (the father of the twins) presents him with a small pot of beer which he accepts though he does not drink it, but returns it to *Salongo*. The *Salongo* then formally makes his present of slaves, cows, and goats according to his rank and wealth. If the king is unable to meet *Salongo* he commissions *Mugema* to act for him.

From the time of the birth of the twins until all the ceremonies are finished *Salongo* (father of twins) is not permitted to kill any animal or to see blood, and all his vegetable food is cooked in the skins.

Marriage.

The laws of consanguinity are very strict; a man was absolutely forbidden to marry any woman of his mother's clan, nor may he marry into his father's clan, except in the case of two very large clans. Polygamy is universal, but it has not

always been the custom to have an unlimited number of wives. In early years men were restricted to three wives, later on others were added because men began to regard them as property, and often bought women instead of keeping large herds of cattle, which only excited the envy and greed of those in high places. Women were much more easily concealed than cattle in the large enclosures or banana plantations, and therefore did not excite any feelings of envy in the owner's superiors.

Polyandry is practised by two women only—the dowager queen (*Namasolo*), and the *Lubuga* (queen sister). These women had as many husbands as they chose, though they never went through any marriage ceremony, nor might they have children by them. Of these two women it is commonly said all Uganda is their husband; they appear to be fond of change, only living with a man for a few days and then inviting some one else to take his place.

There were various ways of obtaining wives, the king always inherited a number from his predecessor, then he received young girls from chiefs or peasants, thirdly he obtained them as war captives, and fourthly he has them paid as tribute or taxes. A chief might obtain his wives as captives of war, as presents either from the king or peasants, or by paying the usual dowry. Peasants had women given to them by their masters for some special service rendered, captured them in war, or paid the dowry-fee to their parents for them. Any slave who was presented with a wife by his master, could never take her or any children she had by him if he changed hands.

The marriage which was regarded as most honourable and binding was the one by contract, when both parties agreed to come together as husband and wife. In this case the man first speaks to the girl and asks her to become his wife or he sends a friend to the girl's uncle, who tells the parents and asks for her in marriage. The girl is then consulted, and if she agrees, the parents tell the messenger they consent. The engagement is recognized by the relatives when the man sends the girl's parents two or three large gourds of plantain beer; each gourd contains about two gallons. The beer plays a most important part in the ceremony; it is the official sign of recognition by the parents on both sides, and relatives, of the engagement, and signifies the girl's consent has also been obtained. After this formal betrothal the parents and relatives decide the amount to be asked as a marriage dowry. A chief would have to pay two or three cows, several goats, and a number of good bark cloths. These are divided among the parents and relatives, the girl only receives a couple of bark cloths. The bride is not allowed to leave her parents' house until the amount has been paid. The giving and receiving the beer is of greater importance than the dowry, it is the contract which proves the legality of the marriage if any dispute arises afterwards. When everything has been settled the girl goes through a process of washing, rubbing, and anointing for six days prior to her marriage. On the day of the marriage the relatives and friends of the bride meet at the bride's father's house, or some other suitable house not too far away from the bridegroom's; similarly the bridegroom's relatives and friends meet at his house. After sunset two torch-light processions start, one from each

place, and meet half way between the two houses; the bride wears a lovely bark cloth, brass, copper, and ivory armlets and anklets, and bead necklets, she is veiled and carried on the shoulders of a strong man; her brother escorts her with all their relatives. The other party is headed by the bridegroom's sister and his relatives. When the parties meet, the bride's brother takes the bride by her right hand, and places it in the hand of the bridegroom's sister, who makes promises on behalf of her brother to treat the bride with all honour and respect, and always care for her. The bridegroom's sister then gives a present of cowrie shells to the party which brought the bride, and they return to their home. The bride is again carried, this time by one of the bridegroom's retainers, and is accompanied by a female relative called *Mperekezi*. When they reach the door of the bridegroom's house the bride is set down, but refuses to enter until the bridegroom comes out, welcomes her, and gives her two or three cowries. Again, when she enters the house, she won't sit down until two or three more cowries are given by her husband; later on when food is served she refuses to eat until he has again given her a few more cowries. These are tokens of his love, and should he refuse them or neglect to give them, the bride is free to return home and the marriage can be broken off.

The *Mperekezi* remains with her sister four days; she seldom leaves her side, and sleeps with her by night; she is sent to prove the bride has relatives, and is not a forlorn slave with no one to care for her; during her stay the marriage is not consummated; when she returns home she takes all the borrowed necklets, armlets, and anklets the bride wore on the occasion of her marriage. She is escorted by a party of relatives and friends, who announce her to her parents as the bride returned; they receive her with affectionate greetings.

For a month the bride is secluded, and only receives near relatives; she wears her veil all this time. She is not allowed to handle any food, but is fed by one of her attendants. A peasant's wife is secluded for two or three days. At the end of the month the bridegroom chooses four men called *Bazala* (they who give birth), who come to the house; the husband and wife give in their presence mutual promises to be faithful to each other, to respect each other, and the wife promises obedience to her husband. These men are not only witnesses of these promises but also act as judges and peace-makers in case of any disagreement or difference arising between the husband and wife. Should the husband neglect or illuse his wife she runs away to her parents, or clan, who refuse to restore her until the husband has promised to treat her as becomes his wife and stated his reasons for his neglect or bad conduct. If the wife is blameworthy she has to promise amendment in her behaviour. The husband does not take his wife back at once, he goes home alone, prepares a present of a bark cloth and a goat for his wife and possibly a goat and some pots of beer for her relatives. If they refuse the conciliatory gifts they must restore the marriage dowry and the woman is divorced.

When the *Bazala* come the marriage is disannulled if either contracting party wishes, but if they agree to continue together the husband may in the

future appeal to the authorities for the restitution of his wife if she leaves him. Each wife has her own house; peasants however live with their wives in the same house, whilst a chief has his own special house and has his wives to stay with him according to his pleasure. The husband gives each wife one or more female slaves or places with them some of his own female relatives to be her maids or servants. A portion of his garden with plantains in it is also given her, and she is expected to supply him in turn with his other wives, with cooked food. Men rarely, if ever, cultivate, one woman can raise sufficient food to keep two or three men. Directly a woman comes out of seclusion she cooks a meal for her husband, who eats it with the party who went to bring his bride. When the bride first goes to cultivate her garden, the bridegroom's sisters go for her about nine o'clock, the usual time for women to cease cultivating; they give her twenty cowries and escort her back to her house. If they neglect to do so she works on until evening, when she returns greatly offended by the neglect. Barrenness is always regarded as a great misfortune, and all manner of means are resorted to in order to procure offspring, medicine men are consulted by both husband and wife; if it is proved the woman is sterile she invariably loses her husband's affection; she may be divorced or only neglected, unless she possesses sufficient charm and skill to retain her position with her husband. A sterile wife is generally sent away because she prevents her husband's garden from bearing fruit. Wives are always kept apart from the men's quarters, but any male relative is free to go into the women's quarters to see them. When any women go out of the chief's enclosure to visit friends a suitable escort is provided; they are never permitted to go about without permission and an escort. Within their own quarters the women frequently go about nude, wearing only a waist ring. Young girls until marriage never wear any clothing except the waist ring made from the pith of the fruit stem of the plantain, covered over with the skin of a water lizard, or plantain fibre neatly plaited over it.

At the time of ratifying the marriage before the witnesses, the bride lays aside her veil and the relatives who come to see her each bring her a present of plantains to supply her with the necessaries for commencing her household duties. If the husband has found his wife to be a virgin he kills a goat from which he takes one leg and sends it with the bark cloth on which they lay to consummate the marriage, and which bears traces of sexual intercourse, to her parents to indicate the fact of their daughter's virginity. On the other hand if she is found to be deflowered he sends the bark cloth with a round hole cut in it, which is the sign the bride was not a virgin. The rest of the meat the wife has for herself and friends.

After a few months of married life the woman pays her parents a visit. She takes them a present of butter and the bark cloth she wore as a bride. When she returns to her home she brings a fowl (a cock) obtained from her uncle who arranged her marriage with her parents; this bird she must herself place in the hands of her husband; it denotes her final acceptance of him as her husband.

During the period of menstruation a woman is said to be *Wa Mirembe*, at

peace. She is not permitted to come near her husband, she may not enter the chief's house if she is his wife, she must not cook his food, touch any of his weapons or sit on his mats, bed, or seat. She is in fact kept away from any of her husband's belongings. Menstruation is said to be caused by the moon which affects women. A woman who does not menstruate is said to be a dangerous woman capable of killing her husband. A man who has a wife who does not menstruate always cuts her slightly with his spear, to draw blood before he goes to war; to ensure his safe return.

Adultery was invariably punished by death, both the man and woman being put to horrible tortures to extract confession, and afterwards killed. If a peasant or slave looked at one of his master's wives he was liable to have his eyes gouged out. If a woman who is pregnant by her husband commits adultery she will be sure to suffer; either she will die with cross birth, or fall ill of *amakiro* (insanity in which she tries to kill and eat her child). If a woman dies in child-birth her relatives fine the husband because they say they did not marry her to two men, and he has allowed by negligence some one beside himself to have connection with her. He has to pay two women or two cows, two goats, two hoes, and two bark clothes. Cross birth is a sure sign of adultery, they affirm. Any man caught in adultery is first of all passed on to the *Owesaza* or earl of the district, who confiscates all his property and wives, which go to the husband of the guilty woman; he can only retain a sheep for himself. The *Owesaza* has the right to redeem the man if he wishes to do so, by paying the injured man a cow, if he does not wish to redeem him the man is put to death.

No man may see his mother-in-law or speak to her. If he wishes to hold any communication with her it must be done through a third person or she may be in another room out of sight and speak to him through the wall or open door. A daughter-in-law may speak to her father-in-law, but may not hand him anything. Any breach of these customs will cause nervous debility with tremors in the hands and other parts of the body. The reason why a man may not see his mother-in-law is because he has seen her daughter's nakedness. A man must not touch his wife's uncle's daughters, that is, the man who secured his wife for him; this also will bring on tremor.

If either a man or his wife who have a child *simuwalule* (not having gone through the ceremony for naming it) commit adultery the child will die. The medicine man may however discover the cause, and save the child by taking a bit of bark cloth cut from the bed of each parent, which he ties together and dips into a vessel containing urine from each parent, and gives the child to suck whilst it holds a cowrie shell in its hand.

When a man's wife has a number of children her relatives come to her husband and ask for *endobolo* (some of the fruit of the marriage). If there are three children they take two and the father keeps one, if six he has two and they take four. He has the right to redeem them if he prefers to do so; the relatives must then take either cattle or goods.

The children of a slave are always the property of the master unless the slave has made blood brotherhood with one of his master's sons when the children are all free born.

A person speaking of himself prior to birth says, "Whilst I was still in the calves of my father's legs." A man's seed is always said to be in the calves of his legs, and a man with large calves is admired and spoken of as being able to beget children.

Disease and Death.

To the mind of the Muganda there is no such thing as death from natural causes. Both disease and death are the direct outcome of the influence of some ghost. The reason why ghosts cause sickness or death may be due to some evil disposed person who has invoked the ghost's aid against the person whom he owes a grudge, or it may be the sick person himself has transgressed some custom and incurred the wrath of the ghost. In any case of sickness the first step the relatives take is to ascertain the cause of the illness. To obtain this information they appeal to a *Mandwa* (priest or medicine man) who consults one of the three oracles, *Ngato*, *Mufumu Muse we Nkoko*, or *Mazi*. The *Mandwa* (priest), or *Nkuba we ngato*, brings out a strip of cow's hide 4 feet long and 18 inches wide, spreads it on the ground and takes up his position at one end of it, whilst the suppliant kneels at the other end. The *Mandwa* (priest) has also nine pieces of cow or buffalo hide 4 inches long by 2½ inches wide; eight are plain, but the ninth has a number of cowrie shells stitched on it, these are called *ngato*. The *Mandwa* has also by his side a stick 2 feet long with a natural hook at the end, with which he hooks his *ngato* and draws them back when he has thrown them upon the leather strip. When all is ready the suppliant pays the *Mandwa* nine cowrie shells; these they call *etembe* (assurance money); the full fee is paid when the person recovers (nine is the sacred number in Uganda), the suppliant then states the case for which he desires the *Mandwa's* aid. When the case has been stated the *Mandwa* takes up the *ngato* in one hand and throws them down on the leather, watching how they fall; he throws them several times and during the process he restates the principal symptoms of the illness. At length he is satisfied and takes up his stick, and addressing the suppliant demands if the case is thus, whereupon he recounts the main symptoms and taps the leather strip with his stick. When the *Mandwa* has finished his part he hands the suppliant the stick, who in turn recapitulates the symptoms of the illness. By handing him the stick the *Mandwa* puts the suppliant upon his honour to give a faithful account of the case. This done the *Mandwa* once more goes through the process of casting the *ngato* before giving the verdict. In some cases he prescribes herbs which are gathered and used either internally or externally; sometimes the suppliant is sent to another *Mandwa* because some particular spirit has to be appeased over which he has no influence, *Mufumu Muse we Nkoko*.

This custom is only for royalty and the wealthy. The sick person is first asked for a little of his saliva, which is received on a strip of plantain leaf; some

animal, a goat, or cow, or a fowl is then chosen and forced to swallow the saliva. The *Manduca* then takes the fowl or animal and kills it by cutting it open from its mouth down its neck and stomach. He takes the viscera and examines the small intestines, every spot or mark is noted and counted, should there be an even number the sick person will die, whilst an odd number augers well and the person is sure to recover. One mark or pimple is a particularly good omen and denotes long life with good health. A bit of the entrail is cut on which is one of these spots, this is dried and stitched in a tiny leather bag and worn round the neck by the person to ward off future evil.

The Water Test.

In this case the *Manduca* brings a pot of water, into which the sick person expectorates; he then throws on to the water some powdered herb dust. If the dust floats in one unbroken mass when the *Manduca* rolls the pot from side to side all is well, or if it breaks up into an uneven number of parts it is considered a favourable omen; should it however break up into even numbers it augers ill. Sometimes five bits of stick are used instead of powdered herbs. After giving his verdict as to whether the person will die or recover, the *Manduca* proceeds to prescribe for the patient; in some cases as above, the remedy is herbs; but often it is to appease some ghost or obtain the aid of a ghost.

The deities have large *masabo* (huts) in which they dwell and in which the priests attached to the god also live; these are situated in various parts of the country. Each person however keeps a small *sabo* (hut) or a number of small *masabo* (huts) near his house where the spirits of deceased relatives reside. If the suppliant is sent to one of the gods he has to take a present suited to the god, a cow and twenty pots of beer, some bark cloths and firewood; a less wealthy person would take a goat instead of the cow, whilst a poor person would take only a fowl, or a skin of a goat or a feather of a fowl, but always some bark cloths and beer, no one is exempt from offering these. In some cases when the priests of the deities were consulted they would hold converse with the spirits and then tell the cause of the sickness; sometimes the cause was a grave had been neglected and fallen into a bad state of repair, at others the ghost wanted a cow, or goat, again it needed a slave, or was cold and wanted a bark cloth. When these had been brought the healing remedy was supplied and the person recovered. If the suppliant had been sent to the *sabo* (hut) of one of his relatives he would kneel by the door and address the ghost inside; he would first recount all his troubles, and then make a promise of some present to the ghost according to his rank, and then beg its assistance or challenge it to overcome the other spirits. In this challenge he pours out some beer in the doorway on the ground and says, "I have stated my case, I will give you a present (here he mentions what he means to give) now let him that overcomes drink." The animal or fowl dedicated to a deity is turned loose by the hut (*sabo*) and always kept there as the property of the ghost, and replaced in case

of death; if it is only a skin or feather it is tied to the doorpost, but the bark cloth is placed inside the huts; it is, however, removed to clothe the sick person for a time, who thus derives the ghost's assistance to throw off the illness.

Sometimes the *Mandwa* failed to heal the sick person, and a higher order of priests had to be consulted. In such a case the special *Mandwa* of a *Lubare* (god) would have to consult the deity. He first enters the *sabo* alone, and tells the *Lubare* who the person is and why he has come; this he does by kneeling before the wall which divides the ghost's room from the rest of the house, and speaking to the deity through the reed wall. When he has thus announced the suppliant, he goes out and brings him in, and together they kneel before the wall, whilst the suppliant gives an account of the sickness; the *Mandwa* then takes a pipe of tobacco and smokes it fiercely; this works him up into a frenzy and causes him to lose his identity; he speaks in loud and excited tones which are recognized as the voice of the *Lubare* (god) speaking through the medium of the *Mandwa* (priest). The deity thus incarnated explains to the suppliant the cause of the illness and the remedy for it. When the deity has told the suppliant all he requires the *Mandwa* priest goes to the back of the house where the deity leaves him, and he regains his personality and may go about as before. The same priest may not always be honoured as the medium, one of the several priests of the god may be chosen; in cases of particular *Lubare* there is only one priest who is always under the spirit's influence, he never leaves the *sabo* (hut). In each of the above cases the remedies are chiefly for sick women; in case of sickness among males the *Mandwa* generally visits the sick man's house to perform his ceremonies after he has divined the cause of the illness as mentioned above. A sick person is usually surrounded by numbers of relatives and friends, who sympathize with him and offer their counsel and help. When the *Mandwa* arrives to treat a sick man, the sick person is carried out of the house into the open, the *Mandwa* kills a cow or goat brought for the purpose, and catches all the blood in a vessel; some of it he sprinkles on each doorpost, he also takes a stout stick 3 feet long, fastens a tuft of grass to each end, places it across the doorway, and sprinkles it with blood; the sick man is then anointed with blood on the forehead, on each shoulder, and on either leg, just below the knee; the sick man is set on his feet wearing a bark cloth thrown over his shoulders, and told to run as fast as he can, to jump over the stick in the doorway, allowing the bark cloth to fall off him as he does so, and make for his bed. He must on no account look round but keep his eyes fixed before him on his bed and reach it as quickly as possible. Sometimes instead of sprinkling the doorposts with the blood, the sick man is taken into the garden where the *Mandwa* (priest) cuts down a large plantain tree; the trunk or stem of the plantain has a long slit made in it wide enough for the man to pass through; this is sprinkled with blood, and the sick person passes through it allowing his bark cloth to drop off as above, and runs to his bed. The *Mandwa* takes up the meat, the bark cloth, and the plantain stem, and goes in the opposite direction to that the sick man took without looking back; the plantain stem

he throws in one of the main roads; he takes the meat and bark cloth for his own use.

Poor people who are unable to supply even a fowl for the blood are sprinkled with a mixture of water and ashes.

The evil disposed ghost which attacks people of its own accord, uninfluenced by some living person, is usually thought to be the ghost of the aunt on the male side. These ghosts are sometimes most troublesome, causing the man's wife or his children constant sickness, and nothing will appease them. In such a case the *Mandwa* has to capture the ghost and destroy it; he comes to the house bringing either a cow or buffalo horn into which he puts a cowrie or snail shell with a seed of the wild plantain; this he places on the end of a long stick and passes up the central post of the hut until he reaches the top near the roof. The spirits always take up their abode in the highest part of the conical shaped huts on the central pole. During the process of capturing the spirit the house is kept in darkness and only two or three people are permitted to be present. When the *Mandwa* has got the horn to the top of the pole he works it about until the shells and seed make a squeaking noise, this he pronounces to be the voice of the ghost which has entered the horn; he then rapidly lowers the horn, covers it with a bit of bark cloth and plunges it into a pot of water; the ghost thus secured is carried off in triumph to the nearest river and plunged into it; if there is no river near the priest secures the mouth of the pot, and carries it off into a place where there is some unreclaimed land where he deposits it, and leaves it to be destroyed by the next grass fire. In some cases women are said to be possessed by a ghost, the symptoms are abdominal pains and swellings; the remedy is to inhale the smoke of certain herbs which are burned upon a plate of hot embers. The ghost is supposed to flee from the smell of the smoke.

Death and Burial.

Death is the departure of the spirit from the body to take up its abode in a different form and under changed circumstances.

When the king is ill the Katikiro is always near at hand for any emergency. The nature of the sickness is kept secret, and called *senyiga*, a severe cold. From time to time the more influential chiefs are admitted; there are always a large number of his wives present. When the Katikiro and his advisers see the king is dying they exclude every one, except two or three of his principal wives. For a time after death those in attendance keep the fact secret from the people to ascertain whether he is really dead. The public announcement of the king's death is made by beating the great drum in slow measured beats, and also by extinguishing the fire *Gombololo* which burns before the main entrance to the royal enclosure; the people among themselves do not say the king is dead, but "the fire is extinct." Each king during his life-time builds a large house in his enclosure, which, after his death, becomes his *malalo* (the abode of his ghost). The corpse is washed immediately after death, and the limbs are straightened, the

arms being placed along each side; it is then taken into the *malalo* (tomb), wrapped in bark cloths, except the face, which is exposed. In the royal enclosure all is wild confusion and disorder, the widows, relatives, and favourites of the dead king bewailing their loss with loud cries, and beating their breasts. The store-houses and treasures have to be guarded against robbery from relatives and their friends. The *Bamboa* (royal body-guard and public executioners) are set to guard all buildings, the entrances to the royal enclosure, and also the *malalo* (tomb). Inside the tomb the *Nalinya* (queen sister) sits in regal state; she it is who has full control of the ceremonies. Only the *Basaza* (earls) and the more highly favoured *Bami* (chiefs) are permitted to enter and gaze upon the face of the dead, and offer *Nalinya* (queen sister) their condolence and sympathy.

Directly the drum announces the death of the king the markets and public places are deserted; people hurry with their wares into every conceivable hiding place, whilst the lawless run riot, robbing and plundering everywhere; chiefs and peasants alike rapidly arm, and adopt the national mourning dress of tattered bark cloths, and a girdle of withered banana leaves; retainers crowd to their respective chiefs, robbing and plundering as they go; chiefs set guards over their enclosures and then hasten off to the royal enclosure to hear who is to be the king's successor. Nothing more can be done until the new king has been chosen. The choice lies with the *Katikiro* (prime minister) and *Kasufu* (guardian of the princes); if they agree in their choice all goes smoothly, but should they disagree the nation takes sides and they fight it out; the conquerors proclaim their prince king, and the obsequies proceed. The new king goes to the *malalo* (tomb) and after looking upon the face of the dead king, covers it with a piece of bark cloth, which is handed to him by the *Sebaganzi* (the new king's maternal uncle); the body is then formally handed over to *Mugema* (earl of Busiro and keeper of the royal tombs), *Kago* (earl of Kyadondo), and *Sebaganzi* (the king's uncle), to be embalmed. These men, with a number of the *Bamboa* (royal body-guard), take it to Busiro for the embalming process, which lasts two months; the viscera is removed, washed and dried, the body has all the fluids squeezed out of it, and butter rubbed into it; when this is done the viscera is restored and the body wrapped in bark cloth strips, each finger and toe being first separately bound, but afterwards all bound together by longer and wider strips. During the time of embalming, the *Mugema* (earl of Busiro) chooses a site on one of the hills in his district and builds a large house on the summit for the reception of the corpse. The corpse, when embalmed, is taken and placed in this conical hut, on a wooden bedstead, which is built by planting four posts in the ground; to these side and end pieces are fastened, and on them cross pieces are laid; this bedstead or trestle is covered with bark cloths, the corpse is laid on it, and many more are placed over it. After placing the corpse in the hut the doorposts are removed and the roof allowed to come down to exclude anyone from entering. Four men and four women are brought, bound, and clubbed to death at the hut, the men on the right hand side of the door, and the women on the left; the four women are

the principal wives of the deceased, *Omufumbiro* (cook), *Omusubika* (chamber-maid), *Omusenero* (a lady who has charge of the beer), *Omulindamazi* (keeper of water). The men are *Kauta* (cook), *Seruti* (brewer), *Sebalija* (herdsman), and *Kalinda* (the guard of the fire at the entrance gate of the royal enclosure); the bodies of these people are not moved, they lie where they fall when clubbed to death. The hut has a high, strong, reed fence round it, with a second one at some little distance lower down the hill; between these two fences a number of male prisoners, whom the deceased king had made captives, are brought and clubbed to death, their bodies are also left where they fall; the number of the prisoners killed varies from fifty to a hundred, or even more. Some of the widows who have had children by the late king are brought from the royal enclosure, and placed on the hill to look after the house and enclosures; in the inner enclosure nothing is allowed to grow and straws from the roof are collected and replaced. The hut is never repaired, it is allowed to decay and crumble away. After some five or six months have passed the hut is visited by three chiefs *Mugema*, *Sabata*, and *Gunju*, with some of the *bambo* (soldiers). *Gunju* makes an opening in the hut and enters with one or two of the soldiers; he severs the head from the body of the corpse, and brings it out to the others; the chiefs take it and place it in an ant hillock, where it is left for a few days, guarded by the soldiers, until the ants have eaten all the flesh from it; they next take it to a stream, *Ndyabuweru*, and wash it, afterwards they fill the upper part of the skull with native beer and give it to *Kalogo* (the chief *Mandwa* (priest) of the late king), who drinks it; he also drinks some milk from it; this is done to dedicate him to the service of the ghost of the deceased king, which enters him at any time it wishes to communicate with the king or people. The skull is next taken to the new king; the men announce the fact by saying, "we have brought the king"; the king examines it and gives them permission to remove the lower jaw bone. The lower jaw bone thus removed is wrapped in bark cloth and placed in an earthen pot which has been made for its reception; in the pot are also placed some cowrie shells and seeds of wild plantain, which had been given to the late king by chiefs who inherited their chieftainships during his reign; the more of these he possessed the greater is his honour; they say "he has many chiefs with him"; the pot is then wrapped up in bark cloths until it assumes the proportions of a man, it is ornamented with beads and taken to the *malalo* (tomb) in the royal enclosure of the deceased king, and put in the place of honour prepared for its reception. The skull, minus the lower jaw bone, is returned to the corpse in the hut, which is sealed up and never entered again.

The *Katikiro* of the deceased king becomes the bearer of the "king," the jaw bone is called "the king," and the *Kimbugwe* the bearer of the *mulongo* (placenta), which is also kept in the tomb. All the gateways to the royal enclosure are stopped except the main one, which has a hut built on the spot where the daily fire was kept burning, and the entrance to the tomb is through this hut. The fence round the whole of the enclosure is altered from the ordinary kind of reed fence made

of perpendicular reeds placed side by side, and laced by a creeper to a horizontal one fastened to posts, to a kind of basket-work reed fence used only for enclosing royal tombs. The *malalo* (tomb) is kept in repair by the state, whilst the interior and enclosure are looked after by the widows of the deceased king who had children by him or were chosen for the work; if any of these widows die, or leave the tomb for any reason, the clan to which the one who dies or leaves belongs has to supply another woman in her room; the substitute is reckoned among the wives of the deceased king; the interior of the tomb is a forest of poles to support the roof; these poles form avenues about 6 feet wide in perfect line; the floor is carpeted with a thick layer of sweet scented grass, cut to one length, and beautifully arranged so that the blades are in line. A little beyond the middle of the hut is a *daïs* in the central avenue 2 feet high by 4 feet wide and 6 feet long; at a height of 10 or 12 feet is a canopy of bark cloth which is secured to the pole and takes in two of the avenues; the poles under the canopy are covered with bark cloth and the back and sides of the *daïs* are screened off from the rest of the hut by bark cloth curtains; the *daïs* is covered with lion and leopard skins, and is protected by a row of brass and iron spears, shields, and knives; the chamber at the back of the *daïs* formed by the bark cloth curtains is the home of the *Iwanga* (jaw bone) and *Mulongo* (placenta), and the ghost is attached to these; they are placed upon the *daïs* when the departed king wishes to hold his court, or for consultation on special occasion. The sides of the hut are used by the priests, and some of the widows, who guard the tomb, to sleep in. Outside the enclosure the *Nalinya* (queen sister) of the deceased builds her residence and has authority over all the officers and widows connected with the tomb.

The *Mugema* (earl of Busiro) is guardian of all the royal tombs, and to him the *Nalinya* (queen sister) appeals for any assistance. Each king during his reign builds a huge hut in his enclosure which becomes his *malalo* (tomb); his successor has to find a new site for his enclosure, around it the chiefs build their houses, and in this way a new capital is formed, which for sanitary reasons is desirable.

Death and Burial of Chiefs or Peasants.

Directly a commoner dies, the body is washed and wrapped in bark cloths, a number of plantain trees are cut down and the stems placed side by side on the floor of the hut; the relatives of the deceased then cut a piece of the reed wall of the house which divided it into two, and place it upon the plantain stems; upon this bier the corpse is put, and lies in state with the face uncovered. A sponge made from a section of the *mbide*, plantain from which they make wine, is placed by the side of the corpse and also a pot of butter; each mourner comes, looks at the face of the dead, sponges it, smears a little butter on it, and goes out. When all the relatives have seen the body it is wrapped up for burial in bark cloth. The mourning then commences, the widows and relatives gather round, weeping, wailing, and beating their breasts, showing the things the deceased gave them,

recounting his prowess, good deeds, and asking him why he has left them. After a day or two the clan meets and chooses his successor either from among his sons, or one of the clan, but not the eldest son, who never inherits the estate.

Mpambo.—On the second or third day the eldest son comes to the hut in which the corpse is lying; one of the relatives puts some *nsuju* seeds (a vegetable marrow) in the hands of the deceased, and the son takes them from the hand with his lips, munches them up and puffs them out, some over the corpse, and the rest on one of the widows who has never had any children, who becomes his wife. This ceremony, called *Kulumira Mpambo*, is done to show the man was not childless.

Mulindi.—The corpse is then removed to the grave where another ceremony called *Mulindi* is performed. The body is lowered into the grave and a grandson, or if there be no grandson, a nephew, goes into the grave; a knife is passed to him and he cuts off a corner from one of the bark cloths in which the corpse is wrapped; he throws the knife at one of the childless widows, strikes her with the handle of it, and she becomes his wife; he is called *Mulindi*, the one who takes away the stigma of the deceased being childless; those gathered round the grave throw in bark cloths, skins, or other articles of value, and the grave is filled in with earth. After filling in the grave, dried plantain leaves are put upon it to form a thatch a foot or more deep, 6 feet long and 4 feet wide; the leaves are laid on in layers and secured by strips of plantain fibre fastened to stakes driven into the ground by the sides of the grave. All who have taken part in the burying have to wash their hands with moist plantain fibre; the men use fibre from the *mbidi* (the plantain used for making beer), and the women the fibre from *Nakitembe* (the plantain used as a vegetable); the fibre thus used is put on the grave. The hoes and instruments used are also cleansed over the grave, and the strings by which the hoe is secured to the shaft are placed in the thatch of the grave; a little beer is poured on the ground at the head of the grave for the spirit, and the mourners return home; they do not separate until the heir has been chosen and has taken possession of the estate; this sometimes does not happen for six months if the clan cannot agree in the choice of a successor. During this time of mourning the relatives and members of the clan gather together from all parts of the country; they wear the mourning garb, old bark cloths and a girdle of dry plantain leaves, the hair is unkept, the nails are allowed to grow long like birds' claws, and on the chest is a white patch, a mixture of water and ashes. Both men and women abstain from sexual connection during the time of mourning. Each day there is a set time of wailing for the dead, when they drink beer, etc. The food, steamed plantains, is prepared in front of the house, the skins, peelings, etc., are left about the doorway, giving the whole place an air of neglect and desolation. At the end of the mourning the relatives of the deceased and those of the widows who are of various *bika* (clans) bring beer, and food, and put it at the door of the house of mourning. The plantains are cooked with some *mbidi*, a kind of plantain used only for making beer; all is made ready by sunset, the cooked food is placed near the house door,

and a long drum 3 feet 6 inches in height by 8 inches in diameter is also brought out; each of the mourners eats some of the food and drinks some beer; any that remains is thrown on the ground before the house door to be trodden underfoot by the mourners, who dance all night to the beat of the drum. Early next morning at the first sign of dawn the central post of the hut is cut down and put on the fire; this is the sign that the mainstay of the family is gone. All the widows who are destitute or whose relatives are not present gather round and sit on the burning log; if any widow who has a relative present goes to the log she must be removed at once or she will be reckoned as a slave of the deceased, and treated as such in the disposal of the widows. A fowl is killed and roasted on the fire and each widow eats a little of it; fowl is one of the tabu foods of women, it is said to be eaten by these women on this occasion because death came into the world from a woman's disobedience in returning to get food for a fowl; the widows who sit on the log, though retained as domestic slaves, are never sold; they go to the heir of the deceased and always remain in his enclosure, and are not free to return to their relatives should they afterwards claim them. Another post is removed from the hut by one of the relatives of the deceased and set on fire in the garden; all the widows who have relatives present gather round this log; when this ceremony is ended the heir is escorted to the door of the house, a brother of the deceased brings a bark cloth, puts it on him, and announces to all assembled, "this is the heir of so and so deceased." The relatives and friends present acknowledge him by tying a few cowrie shells on his wrists. Any person whom the deceased owed anything comes forward and claims the amount due to him from the heir; the heir is next presented with a shield, a spear, a large knife, and a young woman from the widows of the deceased, to become his wife; a sister of the heir also carries a knife, and accompanies her brother, who goes into the garden and cuts some plantains of the kind used for making beer, whilst his sister cuts some of the kind used as vegetable. On their return to the house a bark cloth is spread for the heir in the place where the master of the house always sits, and the heir takes his seat upon it as head of the house; the relatives and friends come in to greet him as master, present him with a few cowrie shells, and offer their sympathy in the loss of his relative whom he has succeeded. In the evening a goat is killed and cooked; the liver, kidneys, and entrails are cooked separately and eaten by the widows, children, and by any of the relatives who have had sexual intercourse during the time of mourning. A feast is given by the successor to end the mourning ceremonies, the plantains he cut when taking possession are used in making the beer for the feasts and those cut by his sister are used among the vegetables.

The widows who remain over after those above mentioned are removed, are distributed as follows:—all who have had children by the deceased go to guard and keep his tomb. A few who are good looking and young, are sent to the king; the heir takes the rest, but usually gives some to members of the clan. If any of them refuse to go to the place assigned to them they may return to their relatives upon the restoration of the dowry originally paid for them. After this feast all

the mourners have their heads shaved and their nails trimmed, and put away their mourning garb. The house is repaired, and all the peelings, etc., are removed from the door.

Sometimes *basaza* (earls) are embalmed; in such a case the viscera is removed and washed in beer, the beer is drunk by the friends and special favourites of the deceased.

Mourning for Women.

The funeral ceremonies for women are the same as those for peasants. A chief's wife who dies, who in life possessed maids and slaves, has the central post of her house removed and put on the fire, around which the slaves gather, whilst free women are taken away by their relatives as in the case of a chief.

When the chief wife of a peasant dies, he usually builds a new house near the old one; the *masiga* (stones used to place the cooking pots upon) are left in the old house, the relatives spit upon them and then destroy the house.

Mourning for Children.

Upon the death of a child the mourners continue to lament for it two days after the burial; during the second night a few *nkeje* (small fishes) are thrown into the fire whilst the mourners are asleep; the next morning the mourners return to their homes leaving the child's mother to mourn alone. At the end of the set time for her mourning she comes out of the house and tells the other women the time of mourning is fulfilled. If the child who died was a big one, no person is allowed to sit in the doorway until some relative of the deceased has been appointed its heir; if a woman dies during pregnancy the fetus is removed and buried in a separate grave by the side of the mother. In like manner no two bodies may be buried in one grave lest the ghosts should quarrel for the right of ownership and the ousted one bring evil upon the living who were the cause of its discomfort.

The Death of Twins in Infancy.

When twins die they are not buried at once, but their bodies are placed by the fire and dried; the mother has to sleep with them near the fire each night as though they were alive. Should *Salongo* (the father) be absent they await his return for the funeral. The *Mutaka* buries them and *Nalongo* puts the stones from the fireplace on the graves. Each child, according to custom, must have a separate grave.

If the house should accidentally be burned down and the children burned to death, *Salongo* takes a bark cloth and spreads it out on the ground by night; he sits by it and beats a drum until either *Nanyenyekule* or *Nkasikisa* (kinds of flying insects) fall on it; these he catches and makes them up into effigies of the children by wrapping them in bark cloth.

Bones.

Bones of human beings are feared and avoided, and never disturbed unless it is absolutely necessary to move them. Sometimes a woman comes upon them when cultivating and must remove them; she either gathers them together with her hoe, to one side of her garden, and covers them with grass, or burns them. The ghost is always attached to them and fire is the safest and surest method of destroying it.

Murder.

The relatives and clan (*kika*) of a person who has been murdered, take up the case and seek the murderer to punish him. Murderers usually escape to another race of people because no one in their own country will shield them from the death punishment; the relatives of the murdered person hold one of his clan as hostage until the murderer is captured; the hostage is nominally a slave, but may not be sold or put to death; when the murderer is captured the hostage is freed. The prisoner is allowed to plead his cause, but is always kept bound and frequently tortured to make him tell the whole truth and give his reasons for committing the deed; if found guilty he is condemned and clubbed or speared to death, and his body is burned at the crossing of two roads; in case of poisoning, the whole family is put to death, and their bodies burned at the crossing place of two roads; the property of the murderer is always confiscated and goes to the relatives of the deceased and his clan.

If a burglar is killed during his attempt to enter a house no notice is taken of his death nor can the relatives claim any compensation.

When a man is killed robbing a garden during the night, the person who kills him ties the stolen food, plantains or potatoes, etc., round the neck of the man and throws the body into the road; the relatives may carry away the corpse for burial but cannot claim any compensation.

Where royalty is concerned the murderer is rigorously hunted out, and if the man escapes, one of his clan is put to death. No one may shed royal blood on any account, not even when ordered by the king to slay one of the royal house; royalty may only be starved or burned to death.

A fine is imposed on the perpetrator of homicide; part of it is one or more girls. Any person who accidentally kills another flies to his clan, and they are bound to help him to plead his case, and pay the fine; the fine goes to the clan, the father of the deceased always gets the large portion.

A person who commits suicide is not buried, the body is taken to the cross roads and burned; if the deed was done in a house, the house is burned.

Property and Inheritance.

The king is the owner of all land, he can dispose of it as he likes, though royalty and the nobility resent it being bestowed upon one of another

nation. The *Basaza* (earls) of districts, *Bami* (chiefs, under the earls), and the *Batongole* (chiefs who manage the king's private estates), can be removed and others appointed by the king at his pleasure. The appointment of earls, etc., will be treated later on under the head of Government. Here, however, it may be stated that upon the demise of any chief the king not infrequently elects a son or a relative of the deceased to succeed him. The one exception to the above rule is in the case of a *butaka* (family or clan burial ground). Each *kika* (clan) has its burial places, which they choose on some hill or on the side of a hill where there is a fertile plantain garden, extending round them. When three successive generations, father, son, and grandson have been interred in such a garden it becomes a *butaka* or freehold burial ground where other members of the *kika* (clan) may bury their dead. Some members of the *kika* must reside in it to take care of the graves and keep others from using it; no matter where the land is situated or how valuable, if the *kika* prove they have had three generations buried there, the land is theirs, and the king cannot dislodge them or drive them away. It does not follow because there are immediate descendants of those buried there, living, that is a great grandson on the male side, he will inherit the place; the *kika* decides who is to live there and be caretaker of the tombs. In like manner the property of a person is disposed of by the *kika*. The eldest son can never inherit all his father's property, he goes through the *Mpambo* ceremony (see p. 47 under the head of burial), and receives one of his father's widows; but all the property and wives go to the heir who may or may not be a son of the deceased; he must, however, be one of the *kika*. Women never inherit property under any circumstances from a man, though a wife dying with property leaves her possessions to her successor who is chosen by her clan to take her place.

Fire.

The fire at the main entrance to the royal enclosure is called *Gombolola*; the chief or guardian of the fire is a man named *Kalinda*; tradition says the first *Kalinda* came to the earth with Kintu carrying his fire from the Supreme Being.

On the left hand side of the gate as you enter the royal enclosure is a small hut with its door facing the gate; in front of this is a hole in the ground 6 or 8 inches deep and 12 inches in diameter; this is *gombolola*, where every night fire from the hut is placed, and kept burning brightly all night, even during a rain storm, until daybreak, when it is removed to the hut again. When the king journeys the fire goes with him, and when he dies it is extinguished. The death of the king is in fact announced to the nation by the words *omuliro guzukida* (the fire has gone out).

Kalinda has also charge of all the firewood and torches for the royal enclosure; each month in turn the chiefs bring reeds for torches and firewood; these are given to *Kalinda's* subordinates, who make them up into regulation bundles and bring the right number to the hut of *gombolola* each evening to be distributed by *Kalinda* for the royal house.

On the death of the king Kalinda is one of the people to be put to death at the door of the hut which contains the king's remains.

Food.

The staple food of the country is the plantain or banana; there are a great number of varieties of this plant; the natives say there are over one hundred kinds. For practical purposes they may be grouped under four heads—

1. *Toke*, the kind used as vegetable always cut and cooked green.
2. *Mbide*, the kind used for making beer.
3. *Gonja*, the kind used for baking in hot embers when they are just ripening and boiled when ripe and eaten as a sweet after the meal.
4. *Memvu*, the banana such as is known in England, eaten by natives when travelling or pressed by hunger. It is more commonly used for making sweet wine not unlike cider.

The women do all the cooking; they alone can cook and serve up the plantain to perfection; they cut the bunch when it is full grown before it begins to ripen, the plantains are then peeled, wrapped in a green leaf of the tree, which has been held over a fire to make it supple and tough; the bundle is placed in a large open earthenware pot, at the bottom of which is a layer of fibre from the mid ribs of the leaves and a little water. Various kinds of food can be cooked in the one pot without contamination as each kind is wrapped up separately in plantain leaf, which after it has been passed over the fire becomes impervious to water or steam, very much like oil silk; more fibre and several layers of leaves over the food fill the pot and keep in the steam. The food when cooked is mashed in the leaf which holds it, by pressure between the hands; it is then served up in a basket, wrapped in several leaves from the pot, and a layer of fresh green ones, to keep it hot and a second basket is placed over the top; it will keep hot six or seven hours. When served up for a chief, one of his principal wives or a trusted servant spreads it out before him; he first washes his hands, turns out the food on to the floor, on the leaves with which it is covered which are spread out to form a cloth, and everyone sits with his legs together and his feet drawn back so that the knees reach the leaf table cloth, but his feet are at his side. The person told off to dish up, cuts the food up into huge pieces and places it before each person; if there is meat he also cuts that up, and adds it to the other food; any gravy or extra kinds of vegetables are turned out into an earthen pot or leaf tied up to form a pot, and placed where the most honoured guest or person present can easily dip his food into it. Before touching the food each person is handed a sponge made from the pith of the plantain stem; they are beaten out by the women with a small wooden mallet on a stone; they are about 10 inches in diameter and a quarter of an inch thick in the middle; in appearance they are like a number of pancakes dished up; being full of alkaline sap which readily removes grease and dirt from the hands, they are even better than water, which is offered when the

sponges are scarce. Sweet potatoes and yams form part of a Muganda's diet, though the former is rarely placed before chiefs, and is regarded as food for peasants and slaves. Besides meat, plantain, and sweet potato they have additional dishes of vegetables, beans, marrows, spinach, and tomatoes; the latter often take the place of meat, which is not always obtainable by chiefs because they are expected to kill their own animals and not to buy meat from the markets. Fish from the lake, fowls, eggs made into omelettes, dried white ants, green locusts, and mushrooms are also used as relishes with food. The people have three meals a day, one between six and seven in the morning, the second at midday, and the third in the evening.

Beer is made from the *mbide* plantains; the plantains are cut just before ripening, and hung up in the cook-house to ripen; the juice is then pressed out by stamping or treading them in large wooden troughs like an iron bath, and put into large pots with a little grain to make it ferment; it is slightly alcoholic, still the natives manage to get drunk after a day spent drinking; possibly the method of sucking it through straws from large gourds may tend to make them feel the effects much more than they would if drunk in the usual way.

In private a man eats with his wives and children, but if he has guests they remain in their own quarters and only his guests have food with him.

The *muziro* (totem) is sacred to its special clan, and may not be killed or eaten by any member of the clan to which it is an object of veneration.

Women are not permitted to eat sheep, fowls, eggs, mamba (a fish), *nzenene* (green locust), pig-flesh, *nsonzi* (a fish).

In the season when *Nzenene* (green locusts) fly, any married woman of the *nzenene* clan may catch them for her husband to eat; who immediately after eating them must have intercourse with his wife, in order to cause the locusts to increase and avert any ill consequences to her children, which might otherwise arise from her catching her totem: this is an annual ceremony when the locusts first appear.

Women are not allowed to kill any animal, or fowl, nor may they catch them for others to kill them; a woman who does so is called a thief, and is considered unfit for society.

Salongo (the father of twins) must not kill any animal or see blood during the time the twin ceremonies are being performed.

Everyone fears to kill a sheep; they get some one to attract its attention and whilst it is looking away club it and then cut its throat. They say a man would be sure to die if he killed a sheep with its eye resting upon him.

The blood of animals is caught and cooked with the intestines; it is considered a savoury dish by rich and poor alike.

Hunting.

There are two distinct sets or classes of hunters, one for large game such as elephant and buffalo, who go on long expeditions, the other for small game, which they hunt nearer home and return daily.

Before any expedition can be organized the huntsmen visit Dungu, the deity of the chase, to ascertain if it will be successful, and to secure his blessing; an offering of meat is taken to Dungu, whom the priest consults and gives his answer to the men.

The elephant hunters only use spears, but employ both pits with spikes in them into which the elephants are driven and become impaled, and weighted spears suspended from trees which are released by the animal kicking a string when passing beneath it. The weight of the spear inflicts a wound of sufficient proportions to cause the animal to bleed freely and drop out of the herd; the hunters follow it up and secure it. Sometimes the hunters are able to conceal themselves and spear an animal as the herd passes along by the place of concealment. Buffalo are either speared or caught in the pit traps.

The ghost of the buffalo is greatly feared, and is always appeased. The head is never by any chance taken into a village or plantain plantation, it is eaten in the open country; the skull has a small *sabo* (hut) built for it and the men place it inside and pray the ghost to stay there and not injure them. In hunting small game dogs are used for driving the game into large nets; the nets are about 3 feet high and 200 or 300 yards long; the hunters take up positions along the net, and others with the dogs beat up the game, and drive it into the nets, where it is quickly dispatched. When the expedition is successful the lower part of the back of the animal is reserved for the god Dungu as his portion; the hunters take the meat to the priests in the early morning, just before sunrise, and also firewood; they make a fire before the door of his *sabo* (hut) and make their offering of meat. It is usual for the deity to tell them what will happen on their next expedition.

When a hunter returns home he must not meet anyone at his house; should he find a man there he must spear him sufficiently to draw blood, if it is a woman he beats her and says, "Go away and accuse me." His wife at once cooks food for him and his dogs; he first feeds the dogs, and then eats his own meal. If a man's wife neglects to cook food for the dogs the husband beats her and won't eat what she has prepared for him. The entrails and part of the leg is the portion given to a dog which catches an animal.

The *Owesaza* (earl of a district) or chief is given one leg of any animal captured in his district.

If a cow falls into a pit trap, the owner of the trap is paid either a leg or the heart of the animal for the damage done to his trap.

Lion or Leopard Hunts.

When a lion or leopard makes its appearance in the vicinity of the capital, and becomes obnoxious by carrying off people or cattle the king calls the Katikiro and tells him to summons a hunt, and kill the intruder. A public hunt is summoned by beating the war-drum, the men gather in the square before the *Lubiri* (royal enclosure), and are told where the hunt is to be, and also how it is to be

conducted. Guides who have ascertained the lurking-place of the beast lead the way to the locality; on such an occasion it is usual for two thousand men to congregate; they are armed with stout clubs, no firearms are allowed, and very few spears are seen; the latter are never used until the animal has been clubbed down and is either dead or unconscious. The earls and chiefs lead their men and enclose a large area of land; each person of rank has his drummers, who keep up an incessant drumming, and the hunters sing songs as they beat down the grass and shrubs and advance; the bewildered animal is driven from place to place in the ever-narrowing circle of beaters until it has to make a stand; sometimes an animal thus brought to bay seeks to escape by bounding over the heads of the people, more frequently one person is attacked; the animal rarely has time to seize anyone, it is in most cases clubbed to death before it claws its intended victim; it happens at times however a man is mauled, but such cases are happily rare. When the animal is dead all the hunters seek to have a blow at it, and any who have spears drive them into the carcase, doubtless to derive strength and courage. The skins of all lions and leopards belong exclusively to the king, no one else may use or possess them. Royalty use them for mats, and leopard skins form the straps for their shoes.

Fishing.

Four methods are adopted in fishing:—1, the large drag-net; 2, the basket traps; 3, the fishing line and hook; 4, the spear for spearing the fish.

Musoke appears to be the *Lubare* (deity) who assists the fishermen; they always go to invoke his aid and obtain *dagala* (medicine), to secure a good catch. The drag-net is very much like the one used in hunting, it is of strong twine made from the fibre of the aloe leaf which grows abundantly in rocky places along the shores of the lake. The net is about 3 or 4 feet wide and 200 yards or more long; it has floats attached to the upper side and weights to the lower side. One end is secured to a stake or tree trunk on the shore, and the rest shipped into a canoe. One man punts the canoe along and a couple of men pay out the net into the water; in this way they enclose a good portion of water and bring the other end back to another stake on the shore and secure it; when the net is let down the chief fisherman takes some of the herbs (*dagala*) they have obtained from the priest of Mukasa, which are kept in a special pot, and smokes them in a clay pipe; the smoke he puffs from his mouth over the water, and it causes the fish to get into the net. When the net has been down long enough to allow the fish to enter it, the men drag it to the shore by the ends; if the haul is good a basket of fish is sent to Mukasa, a thank-offering for his services; a portion of fish is also presented to the pot *Semubuli* which contains the herbs for smoking. This pot has a special place where it resides; it is supposed to be animate, and resents being put anywhere but in its place of honour, and vents its anger by causing the fish to escape. The chief fisherman has then to propitiate it with some offering, and says, "Sir, I don't know who made this mistake, I did not send him to put you in another place"; the evil is thus overcome and their labours are successful.

The canoes too, which are used in fishing, have fish offered to them. Those for the drag-net have the largest fish taken; it is killed in the canoe with the words, "This we offer to you"; the fish is eaten by the fishermen. If they neglect to offer the fish to the canoe more than twice they fail to catch fish in the net. To propitiate the canoe the fishermen offer a fish to it saying "We have wronged you; we are penitent to-day, and offer you this," they can then catch fish as before.

Fish traps are large wicker baskets 3 feet high, and from 2 to 3 feet in diameter; from the wide mouth there is an inner tube made, extending into the middle of the basket 18 inches, and tapering to a small aperture. These traps are taken by canoe into deep water, weighted by stones and let down by ropes about 15 or 20 feet long; the end of the rope is attached to a floating log, which marks the place and keeps the trap from being lost. When they empty the traps no one in the canoe who has committed adultery, eaten animal food, salt, or rubbed butter or fat on his body is allowed to eat any of the fish which is offered to the canoe. Should there be anyone who had infringed any of the above tabus and not confessed it, and been purified, the take of fish will be small. The man who incurs the displeasure of Mukasa by breaking the tabu must go to his shrine, confess the fault to the priest, and receive the priest's instructions as to how he is to be cleansed. In the case of adultery when the man has confessed his fault, the priest calls the husband of the guilty woman and tells him of his wife's doings. Each man has to wear a sign to show they are undergoing the expiatory ceremony, and the guilty man makes the husband a feast which he must accept and be reconciled; the husband may not punish either his wife or the man after this feast, and the evil is atoned for and they are again able to catch fish.

Those who go fishing with lines and hooks from canoes receive *dagala* (medicine) from Mukasa, which they put in the bows of the canoe to ensure success. The first fish caught is killed and the blood sprinkled over the medicine, and the fish is eaten by the fisherman.

The spears are used among the reeds in the shallow parts of the shores where large mud fish exist; the men go into the water up to their waist and spear about in the mud to find the fish.

Agriculture.

The cultivation of the plantain or banana is the principal and primary work of the agriculturist in Uganda. Every man, rich and poor, must have his plantation of plantains, which yields him both food and drink. There are many kinds of plantains, *matoke*, as the trees are called, which are grown for vegetables, the natives give nearly a hundred names and say they differ in flavour. The work of cultivating these trees is entirely done by women; each wife has her portion of land given to her when she marries. A sterile wife is said to be injurious to a garden, it won't yield fruit, whilst that of a prolific woman bears plentifully. The work is not heavy once the ground has been broken up, and the young trees planted;

but this part of the labour must have been enormous when only a pointed stick or the rib of a cow tied on to a handle was used, before the iron hoe was introduced from Bunyoro. Young suckers or plants are planted about three yards apart in rows; these, under favourable circumstances, bear during the second year. Each tree yields one bunch of fruit, and is then cut down; by the time the fruit is ready to be cut one young plant or more will have grown out from the root, and be ready to bear fruit. Very little digging is done about the roots of the trees, the weeds are hoed down and the young plants kept under so that there are not too many to diminish the strength of the fruit-bearing tree; the women strip off the withered leaves from the trees and spread them beneath the trees to keep down the weeds; they also act as manure, and they keep the sun from evaporating all the moisture from the earth. The plantain used as a vegetable is regarded as a female, and the flower below the bunch of fruit is always cut off directly the fruit begins to form; whilst the kind used for making beer is termed the male and the flower is left intact until the fruit is fully grown and cut. When a tree has yielded fruit it is cut down, and its fleshy stem, which is in layers, torn asunder and spread out on the ground beneath the tree with the cut leaves; the inner part, core, or pith, is taken to make the sponges for washing before and after meals. Girls are trained to garden from the time they are about six years old; even ladies and princesses go out to garden; it is esteemed the highest honour to have a well kept garden and a disgrace to the women who have a badly kept one. Outside each plantation is the *nsiko*, uncultivated land which a woman deems an absolute adjunct to her other garden; this is broken up first in one part and then another for potatoes, maize, beans, millet, peas, marrows, semsem, etc., etc., and after a year or two of cultivation is left to rest; in the plantain plantation there is no harvest time, the regular rains which fall almost every month, in addition to the more marked rains of the two monsoons, makes the trees go on yielding fruit without intermission. For other crops there is the season for sowing and also the harvest time. When the potato crop is ready no one may eat until the wife has presented some to her husband; she goes and digs one potato, ties it up in grass in the manner a load is usually fastened, and carries it home on her head; she cooks it separately, and when her husband makes his meal she presents it to him saying, "This is the first-fruit of the food I planted"; he thanks her for working so well and eats the potato; she and her family are then free to eat from the crop, which will rapidly increase.

When they gather the semsem it is tied into small sheaves or handfuls and dried; it is then threshed with short sticks and the stems and husks thrown out into the road to ensure a good harvest the following year; this grain is grown for oil and also cooked with other vegetables, especially spinach, to give them a rich flavour.

The *mbidi* plantain is exclusively kept for beer making; when full grown it is cut and hung in the house over the fire for a day or two to ripen. When ripe the skins are taken off and the pulp thrown into a large wooden trough in

shape and size like an iron bath; the men tread the pulp and run the juice into huge earthen pots where millet (*dhura*) is added, and it is allowed to ferment. This is the national drink of the country, it is slightly alcoholic, very acid, and unpleasant in flavour like vinegar; the natives call this *mweage*.

The *memvu*, our banana, is also made into a drink, called *mbisi*; it is made by pressing out the juice and adding a little water; this is drunk either immediately it is expressed, or it is allowed to stand a day, when it becomes a sparkling drink resembling cider.

Another favourite plantain is *gonja*, which is allowed to ripen, and is eaten as a sweet, either baked in hot embers or steamed; this and sugar cane, which grows freely, are the delight of the young people; a present to a child of a short bit of sugar cane or a *gonja* is received with the pleasure with which an English child receives a packet of sweets.

War.

When the king wishes to make war upon any neighbouring tribe he calls the Katikiro and Kimbugwe, his two most important *Bakungu* (earls) with whom he takes counsel. Together they decide whether there is to be a war, and also who is to be the *Mugabi* (general of the forces). The war drum *Mujaguze* is next beaten, which announces to the nation war is proclaimed; as the measured beats are heard each chief takes them up upon his drum, and in an incredible space of time the whole country is apprized and is up in arms; by day or by night, when the war beat is heard men seize up their arms and hasten to their superiors; peasants rush to their superior chiefs or earls, calling as they run the name or title of their master; chiefs (*bami*) rush to their *Owesaza* (earl) of the district, and the *Basaza* (earls of the districts) hasten to the king. When the earls have arrived at the royal enclosure they are admitted to the reception house, *Blangi*, as are also some of the chiefs; the king meets them there, and each man as he comes up prostrates himself on his face and swears allegiance to the king; the king informs them of the war, tells them who is to be the general, also which of the earls is to accompany him in person, and who is to remain behind to guard the country. The *Mugabi* (general) rises and standing before the king swears to be brave in these words, "Any man whom I meet I will kill." They leave the court and hurry home to make their preparations for the expedition. Inside the enclosure of every earl or chief is a reception room, there the chief or earl sits and his retainers crowd in to swear fidelity; the war drums are beaten all the time, whilst men rush about in great excitement; each retainer as he arrives hurries up to his master and thrusts the prong ends of two spears close to his face saying, "If I meet a man I will fight him"; one spear must not be presented at a superior, it is equivalent to a threat to kill him. The *Mugabi* (general) must complete his arrangements and get some twenty miles from the capital the same day, because he is deputy king, and two kings cannot be in the same place; he therefore takes as many of his retainers as he can muster and starts off for the frontier of the country where

he awaits the whole army. After the first march he is free to take easy stages until he is joined by the whole force; as he goes his army rob and plunder food, fowls, animals and anything they can lay their hands upon; the success of the expedition depends upon the amount thus secured; if they obtain a great amount the expedition will be highly satisfactory; all the plunder is brought daily to the general, who hands it over to a responsible person for proper distribution. The general, earls, and leading chiefs each take one or more wives with them; they are necessary for the starting ceremony and also to cook their husbands' food during the expedition and to nurse them if they are wounded. Each day wherever they encamp the general and chiefs have good sized huts built for them by their retainers; the one for the general commands the whole camp, in front of it, some six or seven paces from the door, the king's *Jembe* (horn in which the ghost of the deity which is accompanying the expedition resides) is placed; if the war lies to the north-west of the capital the *Jembe* (horn) of Kibuka is taken on the expedition; if it is to the north the *Jembe* (horn) of Nende is taken. One or more of the priests accompanies the army, but the general appears to be supreme, being the king's representative. No one but the earls or chiefs may pass before the huts or approach it once the *Jembe* (horn) arrives. The general comes out of his hut and sits in state near the *Jembe* when the army is complete, and all the earls and chiefs come to congratulate him upon his attainment to the office, swear obedience, and wish him success; four goats are killed for a feast for the general and his friends, all the meat that is over the general gives to his wives; in the evening the general lies with his chief wife or jumps over her as she lies prostrate; all the earls and chiefs also either lie with their wives or jump over them; this is to secure success to the expedition and to ensure an abundance of loot. If this ceremony is not carried out the expedition will fail, and all the soldiers march hungry; they are dependent upon each day's loot for food as they have no commissariat. A man whose wife does not menstruate must make an incision in her flesh with his spear and draw blood before he goes to war, to ensure his safe return, otherwise he will fall in battle.

If a woman steps over a man's weapons they must be purified or they won't kill anyone, nor can they be aimed straight. All the weapons are anointed with medicine before going to war.

The wife of a warrior accompanies her husband some distance from the house, wearing a small tuft of grass taken from the grass carpet of her house, tied round her neck; when she parts from her husband she transfers it to his neck and stands to watch him till he is out of sight; when he has disappeared she gathers a handful of grass from the place where they stood, and carries it home and puts it among the grass on the floor of the hut near the fire which is always near the central post of the hut.

All the warriors paint one side of their face red, the other black, and the nose white; the chest is also painted one half red, the other black. Each man carries a shield, two spears, and a long club, and wears a catskin apron over his bark cloth.

The general is distinguished by a bead necklace and a helmet made of plaited plaintain fibre with a tuft of red parrot feathers on the top of it.

On the march to the place of attack the general marches with chiefs and their retainers around him. When they arrive at the last camp or at the battle-field the general decides who shall lead the attack, and gives minute instructions; he does not usually go into battle in person, but remains in camp to direct and control affairs. Sometimes he sends out two or three forces in different directions under the earls or chiefs who go with him. Everything they capture, cattle, prisoners, or loot of any kind is brought to the general to be divided up on their return home.

The slain are stripped of their clothing and ornaments, but they do not usually mutilate or abuse the bodies of enemies. The exceptions are, first, if the enemy is very powerful and they fear defeat, one or two bodies of the fallen foe are secured, cut up and boiled; the flesh and the water are placed, if possible, where the enemy's food supply is; they consider it will kill anyone who eats this food. Secondly, for the ceremony of purification for the father of twins a ball containing the hair of the father and his nail parings is crammed into the mouth of the man he kills and a bark cloth tied round his neck. Thirdly, when they are returning home to prevent evil following them they cut up one or two bodies, gouge out the eyes, cut off the ears and place the limbs in the roads they take to return home.

On their return directly the army reaches the frontier the general sends the king word he is returning and informs him of the success and what is the amount of spoil captured. On crossing the frontier the army disbands and each chief goes off with his retainers by various routes to the capital. The general, earls, and leading chiefs must see the king the same day they arrive before they change their dress, and report to him on the war. The king meets them outside the royal enclosure, a large pot of beer is brought from the royal enclosure, and each of the earls and chiefs is given some to drink. If the general has been cowardly or lost a battle or the *Jembe* (horn) the earls won't allow him to drink, and he has to plead his case; should it be an earl or chief, the general prevents his taking the beer and accuses him to the king before whom he must plead his cause. When judgment is given by the king, should it be against the man he is either burned to death, or deposed from his office with ignominy; in the latter case he is stripped of his warrior's dress and clad like a pregnant woman; a bedstead is brought and he is tied down upon it and carried round the main roads of the capital. Upon the return of the procession he has to cook food, and make beer for the other warrior chiefs and wait upon them whilst they feast; he is then drummed out of his office and reduced to poverty.

When a warrior returns home his wife goes out to meet him; she takes a small gourd of water which she gives him to drink; he hands her his shield and spears, these she carries home and puts them down on the floor in the house, on the tuft of grass she placed near the fire the day he left home for the war; she then goes and prepares him food; if he suffers no ill effects from the meal all is well and he

takes the tuft of grass from the hearth and puts it among the thatch of his house; on the other hand should he be seized with pains, or suffer any ill effects from the meal, he accuses his wife of unchaste conduct. She must make him a drink of some special herb; if this is effective and he recovers she is free from blame, the illness was from some other cause; if it fails she is guilty of infidelity.

A man who kills one of the enemy in battle wears a wreath of grass upon his head; when he returns to camp he goes before the general and places the spears, etc., from the slain man on the ground at the general's feet; the general praises him and also mentions him to the king. Upon his return home he goes through the same ceremony before his father. When a warrior has killed ten men in various battles, he presents his father with a cow and the shaft of one of the spears taken from a slain foe; the father kills a goat and makes his son a feast; during the feast the father burns the shaft of the spear in public to notify the number of those slain in battle by his son.

When a warrior returns home who has a plurality of wives, one of whom has children by him, but for whom he has ceased to care, he must either render her conjugal rights or go through the following ceremony before going to the more favoured wife. He takes a plantain stem and the wife lies down with it beside her; he then sticks a reed in it and bends it over the prostrate woman to form a loop; on the loop he ties a little of the tuft of grass his wife gathered from the roadside when he left for the war, and jumps over it and his wife. This ceremony frees him from further obligations to this wife, and he can go to the more favoured one without any ill consequences to himself or to his children.

When a war expedition is successful the general sends to the *Lubare* (deity) who accompanied them, nine women, nine cows, and nine goats.

Should princes ever take up arms one against another, or against the king, and one of them falls in battle, the man who kills him must either flee to some other country or be put to death; at the time when he commits the deed he may be highly commended, later on the clan must avenge the prince's death because royal blood has been shed. If a prince makes war against the king and is defeated or killed, should the followers of the vanquished prince return and want terms of peace, they make spears and shields of plantain stems which they place on the ground before the king, who receives these tokens of surrender and pardons the rebels.

To avert public calamity, especially war or plague, they ascertain the facts from the *Lubare* (deity) and the remedy, which is usually to take a man or woman who has something peculiar about them, such as cross eye, or a light skin, etc., a white bull, and a white goat, to the border of the country from which the evil is coming; these have their legs broken to prevent them escaping, and are placed in the principal roads and left to die.

Journeying.

When a man returns from a journey his wife puts some of the bark cloths from the bed of one of his children, upon his bed, and as he enters the house he jumps over one of his wives who has children by him, or over one of the children. If he neglects to do this one of his children or one of his wives will die.

Government.

The king is an absolute monarch, holding the power of life and death in his hands. He lives in great state in a large, reed-fenced enclosure, on the summit of a hill; the whole hill is taken up by the houses of the king's numerous wives and retinue; it has an outer fence skirting the base of the hill, about two and a half miles in circumference and 9 feet high; into this enclosure there is one main entrance with several side and back entrances, the latter, used by the women or servants, are always kept fastened and guarded by soldiers, who have their houses on the outer side of the fence to enable them to be always on the spot. Inside the main entrance, which is open from sunrise to sunset, there are numerous inner enclosures and gates, which are kept closed and guarded. To reach the royal dwelling it is necessary to have an escort from the king; after passing the third gate, one of the guards goes and announces your presence to one of the pages, who goes to the king and obtains his permission to bring you into the royal presence; without this escort it is impossible to go any further than the third gate, where there is a waiting hut for visitors.

The king is chosen from the princes by the *Katikiro* (prime minister) and *Mulangira* (chief guardian of the princes); he must be of the blood royal, no nobleman or peasant can ever ascend the throne. The royal family traces its pedigree through the maternal clan, but the nation through the paternal clan. Princes are zealously guarded by their mothers and the *kika* (clan) to which the mother belongs: each clan hopes it may gain by its prince becoming king.

The capital is built where the king chooses to have his *tubiri* (enclosure) fixed, that is called Buganda or the *Kibuga* (capital). Each king must find a new site for his capital, because the old *tubiri* (royal enclosure) becomes the *malalo* (resting place, tomb) of the late king. All the old *Bakungu* (earls) retain their titles and remain in the service of the deceased king except Mugema, whose office embraces duties under the late and the new king. Their estates, however, revert to the new king. The chiefs who go out of state offices receive smaller holdings sufficient in remuneration for their support, and duties about the *malalo* (tomb).

Directly the new king is elected he goes to Budu, a place in Mugema's district where there is a high hill with a large stone on it; he is placed upon this stone amid general rejoicing and feasting and is said to have "eaten Buganda." The king never walks anywhere outside his enclosure; he is carried on the shoulders of strong men who go at a quick trot with him, and are able to transfer him, when tired, from the shoulders of one man to another without putting him down. After

"eating Buganda," the king selects a temporary residence in Mugema's country where he mourns the loss of his predecessor, chooses new earls and chiefs, and a site for his new *lubiri* (enclosure). During the interval from the death of one king to the election of the new king and the distribution of the *Bakungu* (earldoms) and *Bami* (chieftainships), the whole country is in a state of anarchy, the peasants no longer regard the old chiefs as their masters, and robbery and violence are rampant throughout the land. The king first appoints two *Bakungu* (earls), the *Katikiro* (prime minister and chief justice) and *Kimbugwe* (guardian of the royal placenta), who advise him in his choice of the *Basaza* (earls of districts) and *Bami* (chiefs). Neither the *Katikiro* nor *Kimbugwe* govern any district, but like the king they possess gardens, tracts of land in various parts of the country from which they derive food, taxes, and labour; they pay no taxes or dues to the king, nor do they render him any labour tribute, as do the other earls; on the other hand, they receive a portion of the land tax which is yearly paid to the king and also of the spoils taken in war; both of them are in daily attendance upon the king to assist him in all state affairs, and give him advice in private; they seldom leave the capital even for war. The distinctive duties of the *Katikiro* are, he manages all the business of the state, both civil and political, he tries any cases or disputes which come to him either directly or from inferior courts, with the other earls he considers the qualifications or rights of any person for vacant chieftainships or other officers, and carries the result of their deliberations to the king for his decision.

The *Kimbugwe* is the keeper of the *mulongo* (placenta of the king); each new moon, in the evening, he has to carry this in state, wrapped in bark cloths, to the king. On the birth of a prince the placenta is dried and preserved, placed in a pot which is made for its reception and sealed up; the pot is wrapped in bark cloths and decorated with beads, in olden times with various seeds which resemble beads; this is called the *mulongo* (twin), and has a house built for its abode in the *Kimbugwe*'s enclosure. The *Kimbugwe* is the second officer in the country, and takes his seat in all the councils of the state with the *Katikiro*.

There are ten other *Bakungu* (earls) or *Basaza* (earls of districts), as they are most commonly called. The new king chooses these in consultation with his two leading ministers; as each one is named he prostrates himself before the king and rubs first one cheek and then the other on the ground before the king whilst profusely thanking him for the office he has received.

The country is divided up into ten *sazas* (districts) over which the earls rule. Each *saza* has its peculiar drum beat, and the new earl or chief is said to have beaten the drum of such a district or chieftainship; in the evening the newly appointed earl has the drum beaters to proclaim his election. The *sazas* (districts) vary in size and importance and the earls take rank and precedence, according to their districts, at court and in all civil matters; each earl is held responsible for everyone in his district, but is unable to depose any sub-chief in it, or to elect a new one to a vacancy in it; this is done by the king alone. In each district the

greatest chief is called the *mumyuka* of the earl, there are also numbers of smaller chiefs whose importance and rank are regulated according to their chieftainships. All the chiefs are appointed by the king in consultation with the earls in the first place; but afterwards they are responsible either directly to the earl of the district, or, in the case of inferior chiefs, to him through one of the more important chiefs in that district. The taxes and labour dues pass through the earl's hands to the prime minister; he tries all cases, and if an appeal from his verdict is made, he is present when the case is tried in a higher court than his own. The earls and chiefs have large tracts of land in their gift and members of their own *kiba* (clan) gather round them to obtain either offices as sub-chiefs, or gardens, as the plantations of plantains are called. Each *saza* (district) has to give a certain amount of state labour during the year in addition to the hut tax; this consists in building houses and fences for the king, making roads, and bridge swamps. The huts are all built of most perishable materials, unseasoned timber form the poles upon which a framework of saplings and reeds is placed and the whole is thatched with grass. Reeds stitched on to a reed frame which in turn is tied to growing posts form the fences; the material used for stitching is either strips of bark or a strong creeper. This method of building necessitates constant reconstruction, a hut or fence only lasts four years under favourable circumstances, and often fire destroys them long before this. In addition to the tax and state labour, each *saza* (district) takes its turn to supply the royal house with food, beer, and firewood, and reeds for torches.

The king has a considerable amount of personal property; he possesses large tracts of land in each district over which chiefs called *Batongole* rule; they frequently take the name of some former king such as the famous king Mutesa; the chief is called Mutesa and his land Kitesa, and another is called Mukalya, and the country Kikabya; these tracts of country pass from one king to another and each adds a new name to some garden to immortalize his reign. The *Batongole* (chiefs) also hold some office in or about the royal enclosure, and are responsible for the upkeep of the huts and fences in the enclosure; from the holders of these lands the royal body-guard is chosen, also the police, and the *bambo* (executioners).

The capital is built as before stated, where the king chooses to live; he selects a hill which commands the main roads from the *sazas* (districts), and has a private road to the lake in case he needs to escape to one of the islands in time of war or calamity. At the main entrance to the royal enclosure is the hut in which the fire for *Gombolola* is kept; this fire is placed in a little hole or hollow in front of the hut each evening at sunset, and the guard keeps it going all night; at daybreak it is removed into the hut. The chief of these guards has charge of the men who split up the firewood and make the torches for the royal establishment; the huts in which these men live extend round the enclosure to the right side as you enter the gate; there is a large open space in front of the royal enclosure, and the principal road or street of the capital runs from it. The Katikiro's enclosure is

nearest the entrance to the left of his house; situated on the left of the main road is the Kimbugwe's, to the right is the chief cook, and Kibare's enclosure; the latter holds the responsible office of *musigira*, or representative of the king when the latter leaves the capital for any purpose, and hears any complaints brought against the king. The *Basaza* (earls) and *Bami* (chiefs) each have sites in the capital on either side of the main roads leading to the *Lubiri* (royal enclosure); they also have their country residences, except the Katikiro and Kimbugwe who only possess their town residences, which are maintained in greater state than their town ones. At each place they have a *musigira* (steward) who takes full control during his master's absence; the town steward is empowered to represent his master in any council or important gathering. The earls and chiefs are responsible for the repairs of roads and bridges leading from the capital to their country residences. The sites in the capital are large enough to accommodate the private servants and retinue, and also have sufficient land under cultivation to supply the owner's immediate needs for several days in case of emergency; the enclosures of the Katikiro and Kimbugwe are each about half-a-mile square and have between one and two hundred huts in them for wives and retainers. The fences of the earls or chiefs which adjoin the roads are beautifully worked; the height of the fence and size of the reed rib which runs along the top and bottom indicate the rank of the owner. At the back of the royal enclosure only trusted followers live, and beyond these are the gardens of the king's wives.

Three or four times each month the king holds a reception, which they call *kukika*, and the court or gathering is called the *lukiko*; there is a large room for these gatherings named Blange, built in the third circle of fences in the royal enclosure. In these meetings state business is transacted, cases of appeal from the lower courts are tried and general topics of interest discussed; the people are notified of a meeting by the beat of a drum the previous evening. In the court the king sits in state upon a stool placed on a leopard skin over which is spread a lion's skin; the earls and chiefs have their own places in the court, according to their rank and office; no one may step on the royal mat on pain of death; if a chief absents himself from the *lukiko* (court) more than twice without a good reason for so doing he is liable to lose his office, or to be heavily fined or even put to death; such absences are interpreted as rebellion.

Each year the king sends out his tax collectors into all parts of the country to gather in the annual revenues; the office of collector is highly prized, being a most lucrative one owing to the bribes the man receives; the king's favourites usually secure them. A tax collector goes to each *saza* (district) in great pomp and is greeted everywhere by the title of *Kabaka* (king), because of the office he holds; he takes up his quarters near the earl's country residence, and sends out his men to count the huts in the district, whilst he feasts in his temporary home and receives presents and bribes from chiefs and sub-chiefs who try to secure his favour and easy terms of taxation. Each holder of a hut pays one shell at first, and these are taken to the *Mubake* (collector), who reports the total of the huts to the king; the amount of

taxes for the districts is then decided upon and the *Mubaka* (collector) again sends his men to gather in the sums from the holders of huts or land; for each hut two or three hundred cowrie shells is demanded, and from the district a number of women, cows, goats, and sheep, bark cloths, and hoes; these latter the chiefs or earls of the district with the collector decide who must pay and the amount each must contribute. All the taxes are brought to the Katikiro, who sees the amount is correct and tells the king; the king appoints a time for them to be brought into the royal enclosure and agrees with the Katikiro, Kimbugwe, the earl and principal chiefs of the district, how they are to be divided up; these taxes are the principal means of wealth to the king and chiefs. Besides these local taxes there are those raised on tributary states, from Busoga to the north-east they obtain chiefly women and cattle; from parts of Bunyoro, salt; from Koki, iron, spears and hoes; and from Karagwe cowrie shells. From time to time there are special collections of girls and boys to keep up the numbers in the *Lubiri* (royal enclosure); the king also takes a percentage of the children born of women he gives in marriage to friends or retainers. When any public work has to be done, such as building houses or fences in the royal enclosure, making roads, or rebuilding any of the *malalo* (tombs) of kings, the earl or chief placed over the work taxes all who have to do the work; each workman has to bring at least one hundred cowrie shells, a pot of beer, a fowl, and possibly a goat before he is allowed to commence his work, and must also bring food to the overseer from time to time whilst the work is in progress. If a workman does not begin his work promptly, or is slow in executing it, he is fined and not permitted to go on with it until the fine is paid; a messenger is sent to hurry him up, who also demands a goat or a number of cowrie shells for coming; in case the man is unable to pay his fine or tax at once, one of his family, his child or wife go as hostages to enable him to go on with his work and find time to secure the necessary sum to pay the fine.

In the *Lubiri* (royal enclosure) and at the *malalo* (tombs) there are hereditary offices, as wives and pages, filled by women and boys, whose clans must replace them if they die, run away, or leave for other reasons.

A mother who does not wish her girl to be taken into the royal harem, makes a scar on her forehead or face, by burning her to disqualify her; because no woman with a scar can become the wife of a king.

The land, as has been stated, belongs to the king, and at his death the earls and chiefs, except *Muyema* (earl of busiro), go out of office; there is an important exception to this rule in the case of the *Butaka* (family holdings), where their successive generations have been buried. The leaders or heads of the clan appoint the heir or successor on the death of the owner; he must be one of the *kika* (clan) though not necessarily one of the immediate members of the deceased's family. In the event of the death of an earl or chief the king not unfrequently elects one of his family. Earls and chiefs are frequently deposed or plundered by the king for petty offences, or for becoming too rich, or for making too great a display of wealth; if a chief gets

any warning or an idea he is going to be plundered he removes his cattle and property to one of the sacred hills in the district where they are safe even against the raids of the king; each *saza* (district) has one or more sacred hills, and if the person succeeds in reaching the place with his property before the party sent to loot arrives, his goods are secure; after a few days' residence on the hill, when the king's wrath has abated, he is able to return home. Sometimes people are seized by the king and put to death, the property confiscated, and all the family enslaved; if the latter are able to escape to one of the hills they are safe, and members of the clan then see to their future welfare.

The *Namasole* (dowager queen), *Lubuga* (queen sister), *Mugema* (earl of Buso, the district where all the kings are buried), and *Kago* (earl of Kyadondo) must have a running stream between their residences and the *Lubiri* (royal enclosure).

The new king always elects the *Namasole* (queen mother or dowager queen); if his mother is alive she naturally takes the office, but should she be dead one of her clan is elected. The office carries many privileges, and lands in each *saza* (district) are attached to the office, over which the dowager queen holds absolute sway; she also has her enclosure and officers, to whom she gives titles as the king does to his chiefs, etc.; after she comes into office she only visits her son once, when she appoints his three principal wives, the mother and son never see one another again; if the king were to see his mother again, evil would surely ensue, probably death; the dowager queen may give her son advice, and he may consult her upon any subject, but always by means of a medium. In recent years the dowager queens have seized all the princes who might become rivals to the throne, and put them to death. Owing to the law against shedding royal blood, the princes are placed inside a strong fence, a deep moat is dug round it, and a guard set to prevent them from escaping or being rescued by their mother's clan, and they are starved to death. Should the dowager queen outlive her son she is given an inferior position with only sufficient land to enable her to live in comfort.

The *Lubuga* (queen sister) also has her own establishment with lands and officers attached to it like the king; she does not appear to have any particular duties during the king's life-time; upon his death she takes charge of his *malalo* (tomb) and has her household removed to the hill on which her deceased brother's tomb is situated. She rules all the earls and chiefs of the late king, and has sufficient land to give to each of these gardens which enable them to live in comfort. Both the *Namasole* and *Lubuga* practise polyandry; they also practise *faeticide* because death would be the penalty had they offspring. The *Lubuga* visits the king whenever she wishes; she and the *Namasole* are always carried on a man's shoulders, and never walk when they go outside their own enclosures. All princesses are regarded with great respect by chiefs and people; they never kneel or bow when greeting a man, though he may be the greatest earl; still though given such honour no princess can ever rule the country; the ruler must be a male of the blood royal.

Oaths and Ordeals.

When two people of different clans or tribes wish to make an indissoluble bond with one another, they perform the *Mukago* (blood brotherhood) ceremony. For this they meet at the house of one of the two concerned, in the early morning; the wife of the owner of the house prepares food for them, a fowl usually forms part of the meal. Whilst it is cooking a bark cloth is spread on the ground before the house, and the two men sit on it facing each other; on the bark cloth a knife and a coffee bean pod containing two beans are placed ready, and each man promises before a number of witnesses to be true to the other; they each make a slight cut in the stomach below the navel, with the knife, holding the flesh with the left hand; the coffee bean pod is broken and each man takes a bean from it, smears it with his blood, and places it in the palm of his right hand; each takes the bean from the other's hand with his lips, and each holds his hand over the other's mouth until the bean is swallowed; when the berry is swallowed they tell each other their *muziro* (totem), and commit their children to each other's care. The witnesses are relatives or close friends; all partake of the feast which immediately follows. This is the most solemn and binding oath, and cannot be broken without bodily injury coming upon the person who breaks it; the consequence is often prolonged sickness and death.

If a slave makes *mukago* (blood brother) with a member of his master's family he takes their totem and becomes a free man and one of the *kika* (clan).

Drinking a poisonous herb is the most common ordeal; it is frequently resorted to when anyone is dissatisfied with the decision of a judge. The king elects members of a certain clan whose duty it is to administer the drug to any who appeal for it, or who is dissatisfied with his verdict. This is a common test where two men are striving for the same object each asserting his to be the true claim. The person appointed to administer the *madudu* (potion) makes the man drink it, and after a few moments, when it has taken effect, he bids him come and thank him for his decision; the apparent effect of the drug is to make the drinker rave and shout; it prevents him from walking straight; its effects closely resemble those produced by alcoholic intoxication. A man who is able to get up, go to the priest and thank him, is pronounced successful if it is a dispute about ownership of some article, or innocent if it is an ordinary trial for crime; if a person dies from the effects of taking the medicine he is of course pronounced guilty. A rarer form of trial is to take a stone out of a pot of boiling oil.

The priests occasionally go through ordeals to increase their influence over the people; they lick hot iron, or rub it with the hand, or strike their backs with it.

Salutations.

The salutation of two people meeting is :—

1st Person. *Otyano?* How are you?

2nd Per. *Ah, Ah! Otyano?* There is nothing amiss; how are you?

or,

1st Per. *Otya gwe?* How are you?

2nd Per. *Ah, Ah, or Neda, Otyano?* There is no evil, how are you?

or again,

1st Per. *Otyano?* How are you?

2nd Per. *Sikalaba.* I have not seen it, *i.e.*, the evil; or *Nungi*, it is well.

When friends meet they greet by taking the right hand and saying:—

1st Per. *Otyano?* How are you?

2nd Per. *Ah, ah, Otyano?* No, no, *i.e.*, there is nothing wrong; how are you?

They often keep up a running *Ah*, 1st Per. *Ah*; 2nd, *Ah*; 1st, *Ah*; 2nd, *Ah*; 1st, *Ah*; 2nd, *Ah*, for some time, until one puts the question, *agafayo?* How is it where you come from? The other replies *nungi*, Well, or all right, and asks *agafayo*, How is it where you come from?

1st Per. *Nungi.* All right. *Abewamwe batya?* How are your relations?

2nd Per. *Balungi.* They are well.

An inferior salutes a superior thus:—

Otya sebo? How are you, sir? or *Gwoli sebo?* Are you there, sir, that is, How are you, sir?

To which he replies,

Ndi wano, I am here, *i.e.*, I am well.

When friends meet who have not seen one another for some time they embrace, each one puts the right hand on the other's shoulder and the left round the other's waist; they then put the head first over the right shoulder and then over the left, repeating one of the above salutations.

When a chief returns from his country residence after an absence of some weeks, or from a war or a journey, he sends a messenger to announce his return to all his friends, and to ask after every one of the family. When the call is returned the person goes to *kulisa* (congratulate) him upon his safe return. He has to be announced to the chief unless he is on an equality, in which case the gate-keepers will allow him to pass into the reception room. If he is an equal he enters, and embracing the chief says:—

Kulika tutalo? I congratulate you on your safe return from war or journey.

The chief addressed replies *Awo*, Thank you.

1st Per. *Kulika nyo.* I congratulate you very much.

Chief. *Awo.* Thank you.

Then follows,

Otyano? How are you?

Chief. *Ah, ah, otyano?* Very well, how are you?

1st. *Erade.* Are you well?

2nd. *Erade.* Well.

When an inferior enters to see a chief he kneels down, and uses the above salutations.

Women always kneel when saluting a man, even in the streets. Servants and slaves always kneel to receive orders or deliver messages to anyone to whom they may be sent by their masters.

It is polite to greet everyone you meet anywhere and also to thank anyone engaged in any kind of work.

The words used for thanking anyone for working are *webale kukola*, "Thank you for working," or *okoze*, "You are doing well"; for carrying you say *webale kuitika*, "Thank you for carrying." Words of high praise are *gwoli musaja*, "You are a real man"; *saja* is the male organ, *musaja* means a fully developed or perfectly formed man.

When a person thanks another for a gift or favour they say *webale ompade*, "Thank you for the gift," or *mpade nyo*, "You have given me a splendid gift"; or *ombede*, "You have helped me."

On entering anyone's enclosure if there is no gate-keeper or person to announce your arrival you call *Abemeno mvemuli?* "You of the place are you there?" *Nze gundi*, "I, so and so, am here."

The host usually provides a few coffee berries in a neat basket for his guests to eat; the berries are first boiled, dried, and then baked; this answers to our custom of offering afternoon tea. If the visitor is someone of rank who is not in the habit of visiting, then a fowl or female goat is given.

It is not polite to leave without permission from the host, so you say, *maze kubalaba ngenze*, "I have completed my visit and am going"; the host replies, *kale genda*, "All right, you may go."

The parting is *welaba*, "See yourself," or if more than one *mulabagana*, "See one another," or "Take care of one another"; the reply to this is *nawe welaba*, "And you take care of yourself." A person sending messages, *obandabira bona* or *abewamwe obandabira*, "Greet all or greet all of your family." It is never correct to speak of "my house," or "my home," but always in the plural, *ewafe*, "At our place," and no one says "Your house," *ewurwo*, but always *ewamwe*, "Your place," in the plural.

Arithmetic and Money.

The use of cowrie shells as money has undoubtedly enabled the Baganda to understand large numbers; these shells are pierced and threaded on plantain fibre, a hundred on a string, which is called *kyasa*; ten strings, a thousand shells, are again tied together for convenience, and again ten thousand shells are done up in a bundle and called a *mutwalo*, load. Cowrie shells were introduced by traders from the east coast; they are gathered along the south-east coast and carried up-country and bartered for ivory and cattle; the Baganda then pierce them and string them, and use them for money; prior to the introduction of cowrie shells, round

stones were used as money. Besides the cowrie shells, hoes, knives, and iron spears were bartered, also armlets and anklets of copper, brass, and ivory.

In conversation, the hands are used to emphasize statements of numbers; one finger, the first, held up, indicates one; the two first fingers held apart indicates two; the second, third, and little finger well apart, straightened out, with the index finger bent into the palm of the hand, and held there by the thumb, indicates three; four is indicated by the four fingers held out straight and the thumb bent inwards to the palm of the hand; five is demonstrated by the closed fist, the thumb first bent into the palm of the hand, and the fingers closed over it; ten is made known by the two fists closed being placed together. Any number between ten and twenty is mentioned by saying ten and so many, the fingers held to demonstrate the number, and the number afterwards repeated. Twenty or thirty, etc., is two tens or three tens, and so on to a hundred.

When loads of grass or reeds are being brought for building purposes it is customary to keep count of their number by tying a knot on a strip of bark for each load. Sometimes a bundle of twigs or reeds, 3 or 4 inches long, is used to tell the number of cows or animals a man has, or the number of houses there are in a district, or to enumerate the points in evidence to be remembered. This is also done when a person is visiting at a distance, and various people send messages; each stick represents a person and message to be remembered.

Akatamanyidwa is a number beyond count, indefinite.

Measurement of Time.

The day is reckoned from sunset to sunset, a night and a day make up the day of twenty-four hours. The country lying as it does on the equator has always equal days and nights; there is no twilight or only a very short one of a few minutes' duration and similarly in the morning the sun rises very rapidly and it is quite light in a few minutes.

The terms for the day are :—

Ekiri, night.

Tumbi, midnight.

Mumakya, cock-crow.

Matulutulu, early dawn.

Enkya, morning.

Akasana, little sun, early morning, 6 to 9.

Musana, full or broad daylight, 9 to 2.

Tuntu, midday.

Ohceguhu, afternoon.

Akawungezi, evening.

By peasants the time is frequently gauged by the meals, the morning meal 7 a.m., the midday meal and the evening meal, 6 p.m.

The months are told by the moons, and the division of the month by the phases of the moon.

The year has five moons, and one in which the rains fall, answering to our year they have two years of six moons each.

For longer periods they reckon by the reigns of the kings or by a certain war in the reign of a king. In mentioning the date of birth, "It was in the reign of such a king," or "I was still in arms when such-and-such a war was fought in so-and-so's reign." The age of girls and young women is told by the size of the breasts; after attaining their full growth they begin to hang down; this is considered most becoming by young women, and to attain this end they often tie them down to hasten natural development.

Games, etc.

The national game is wrestling; in this even the king takes a part, and he has his house in which wrestling matches are held. The public matches take place in the open upon soft ground, the spectators form a ring in the midst of which the competitors struggle; songs are sung during the contest in praise of the wrestlers, and drums are beaten to mark the time, and to this accompaniment the spectators clap their hands and stamp their feet. Another favourite game is *mbirigo*; this is played in the main roads; there is no limit to the number of players, each person has two stout sticks, about 18 inches long, which he takes and throws down with considerable force; the stick is thrown to strike the ground with the end and goes flying along end over end some distance; the person whose stick falls short of the others, has to take it and, standing where it fell, throw it to hit one of the others which are left lying for the purpose; if he succeeds in hitting one he takes it up and strikes it with his own stick and tries to break it with the blow; after this they all pick up their sticks and go on again as before. There is also a game like our prisoner's base played by the boys and young men. A favourite game among boys is *kusamba*, the boys try who can drive the others from the ground by side or back kicks; they aim at kicking the opponent on the thighs with the sole of the foot. Indoors the game of *weso*, or as it is known in other parts by the name *mansala*, is universally played.

Women and girls seem to confine themselves to domestic affairs and seldom take part in games; they, however, take part in the dances which appear to be always connected with some religious ceremony.

Magic and Divination.

Magic is practised constantly; if any sickness comes into a family they resort at once to the *Mandwa* (medicine man) to ascertain the cause by divination; this has been described above under sickness. They also have magic to bring evil or death upon any person they dislike or upon an enemy; this is often done by securing the corpse of a relative of the hated person and boiling the flesh and sprinkling it in the garden among the plantains as described in war customs; it

is done by night for greater secrecy, and causes illness and death to anyone who partakes of the food of the garden. The ceremonies for detecting the cause of disease by examining the entrails of fowls or animals has been described under disease.

Doctrine of Souls.

Every one has a *mwoyo* (spirit), which at death leaves the body and is called the *muzimu* (ghost); in this state it continues to exist and is capable of doing good or harm to the living; it is supposed to be capable of suffering cold, hunger, and pain. Death is spoken of as *kukyusa mutima*, "to turn the heart," as though the heart were a bag or casket containing the spirit, which by being upturned emptied out the spirit and caused it to leave the person, resulting in death. When the ghost leaves a man it goes to *Ntanda*, the place of the departed, situated in the Singo district, to give an account to *Walumbé*, the deity of death; after visiting *Walumbé* it takes up its abode in the *sabo* (hut) built by the relatives for its reception either near the grave in the *butaka* (family burial ground) or near the enclosure of the relatives. The ghost cannot be seen—it is like the wind; in fact, the gentle rustling of the plantain leaves is said to be caused by the ghosts, and a whirlwind which carries up dust, leaves, and straws is said to be the ghosts at play, so that whilst the ghost is invisible, the effect and influence of its presence are seen upon human beings and vegetable life. Ghosts can be captured and put to death either by fire or drowning as described under disease; they resent any evil done to the body they have left; they are especially angry if the body is not interred or if insufficient honour is given it in mourning and burial, such neglect is punished by a malevolent visit from the ghost (*kululuma*).

Stories are told of two chiefs who thus suffered, Katambala and Kairo, who neglected to have the bodies of trusted slaves interred but cast them out on waste land. In Katambala's case the ghost haunted him and caused him great trouble by sickness and various calamities, until he consented to be buried in a cow-hide, not in the family burial place, but on the borders of a forest where his grave would be neglected and forgotten. Since then every chief of that office has been thus buried and the appeased ghost has ceased to trouble the chief. The other chief, Kairo, was not buried at all; his corpse was bound up in a cow-hide and thrown over a precipice; the remains of his successors in office must always be thus treated after death.

The ghosts of the *Balubare* (gods) are carried in buffalo or cow horns, or in gourds when necessary, for example, in case of a war to accompany the army. The ghost of the king always resides where the lower jaw bone is. The ghosts of the deities and kings often speak through some medium, one of the priests become possessed by these ghosts whenever anyone wishes to consult the gods or kings, or whenever the ghosts wish to make known anything to the people. The ghost of a father or grandfather is a guardian spirit, and the ghost of an aunt generally an evilly disposed one; the ghost of an aunt frequently kills children and brings various sicknesses upon wives. When an evil ghost takes possession of a

person, which sometimes happens, it causes abdominal pains and swellings; to drive it out herbs are burned by the medicine man and the patient inhales the smoke, which is offensive to the ghost, and causes it to release its victim.

The principal *Balubare* (deities) are:—

Wanema, who has three priests;

Mukasa, who has three priests. He is the greatest of the *Balubare* (deities). He gives the increase of children. No suppliant is ever allowed in his *sabo* (hut); they wait in an outer room for Gugu, the chief priest, to go in and inform Mukasa of the request, and also for the god to possess the priest; the priest loses his identity and the god incarnated speaks and answers questions put to him and advises the suppliant how to act; when the interview is over the priest goes to the back of the hut and the ghost of Mukasa leaves him and returns to the hut and the priest is free to leave the enclosure if he wishes. During the time the priest is possessed by the *Lubare* (deity) he does not leave the hut. The priest is not allowed to drink beer, but must smoke a pipe of tobacco which prepares him for the reception of the ghost. When possessed he is able to lick hot iron, rub it with his hands, or strike his body with it and receive no harm.

Wanga has only one priest;

Musisi has three priests;

Kibuka has five priests. At one time Kibuka is said to have been sent by his father Wanema to assist one of the kings in a war against the Banyoro. When he arrived on the battle-field he went up into a cloud and cast down his assegais and shot arrows to the great discomfort of the enemy, who could not discover whence they came, and were driven off and lost the battle. The Baganda captured a woman among other prisoners; during the fight she was lodged in the camp, and overheard some of the warriors speaking about Kibuka's clever device, in the night she escaped and reached her own people, and informed them of the secret of the Baganda army; the next day the Banyoro again attacked the Baganda, and directly Kibuka began to fight they fired into the cloud a shower of arrows, one of them struck Kibuka in the chest and mortally wounded him, whereupon he fled away some distance and died under a tree; later, one of his priests found him and buried the body secretly, and making up a roll, he placed it in a leopard skin and said it was Kibuka; the bundle was carried to Kibuka's hut, where it still remains. From that time he never went out again to battle in person, only the horn containing his ghost has been sent.

Nende has two priests; he and Kibuka are the two war gods; he goes to war on all expeditions to the north, and Kibuka goes on all expeditions to the west. Nende's *sabo* (hut) is built in a large enclosure which has only one entrance; through a hut named *siganira*. He drinks no beer but eats coffee berries instead. He was given six princesses as wives, and this number is still maintained by the king, who replaces any who die; they always sit in honoured seats during any functions and reside in Nende's *sabo* (hut). Every fifty years (twenty-five of our years) Nende is brought out and shown to the people; a huge pile is

made upon which he is placed, and for nine days or more there are festivities and rejoicings; none of the people who visit him are permitted to drink any beer during the time their visit lasts. If at any time during a war the army is defeated, the bearer of his *jembe* (horn) must secrete it or throw it into the grass where he may find it again and not allow it to be captured by the enemy. The chief priest of Nende never leaves the precincts of the hut because he is always possessed by the ghost.

Mirimu has only one priest. He gives advice and power to warriors to steal the weapons of the enemy.

Kaumpuli has only one priest. He was the son of a prince who took to wife a woman named Naku, against the advice of the priests, who told him this woman would bear a child who would bring plague and death into the country; the prince rejected the advice, took the woman to wife, with the dire result foretold. She gave birth to a son, Kaumpuli, who had neither arms nor legs, and who is the cause of plague. They tried every way to get him out of the country, but wherever they sent him with his mother, the people drove them away; at length a *sabo* (hut) was built for them at Buyego in the extreme north of Uganda, where he lives and from time to time sends plague among the people. Kings were not allowed to look towards his hill, the penalty for so doing was death.

Wamala has two priests. He is the grandson of Bukulu, and originally lived on the Victoria Nyanza. One day he quarrelled with his brother Wanema, and they fought; in the struggle Wamala's dog bit Wanema in the leg, whereupon Wanema took a handful of ashes from the fire and threw them into his brother's eyes; the dust caused Wamala to have sore eyes, and so enraged him he determined to leave his brother and seek a new home. When starting he took a skin of water with him from the lake; he wandered into Singo to a hill named Busindo, and sat down to rest; his servant put down the water skin carelessly, and did not notice the water was escaping; all the water ran out, but formed a spring on the hillside which ran into the valley and formed a lake, which is still called Wamala's lake. Wamala decided to remain by the spring, and built his house by the lake. Later on he discovered the water was running from his lake back to the Victoria Nyanza by the river Katonga; he made some medicine and sent his priest to throw it into the river, which caused the water to turn, form a new channel, and flow back into its own lake again. The new channel is called Kilimba.

Nagawonye has power over the grain and over the yearly crops. Each year an offering of first-fruits is made to him. He causes the crops to grow and the rain to fall. He was probably adopted from Bunyoro when grain was introduced.

Nagadya is a goddess with one priest.

Nalwooga is a goddess with one priest.

Musoke is the rainbow; he gives rain and is the patron of fishermen. No one may point at the rainbow. If they do so the finger becomes stiff and they lose the use of the joints in it.

Dungu is the god of the chase.

The *Masabo* (huts) of the ghosts are kept in good repair; they vary in size according to the honour of the ghost; some are small huts only a couple of feet high, whilst those of the *Lubare* and kings are 60 feet high, and afford accommodation for the priests to live in. Offerings of animals, slaves, food, clothing, firewood, and beer, are frequently made at these shrines; the offerings are made to obtain some benefit, such as recovery from illness, to avert some calamity, sickness, or war, or again in fulfilment of a vow. One ghost is sometimes pitted against another; the relatives of a sick person pour out beer on to the ground, and ask the aid of one spirit against another which is doing them harm; the words used are, "Let him which is strong drink and overcome." The ghosts of relatives sometimes demand food, clothing, fire, etc., which are placed inside the huts, the clothing is occasionally used by sick people desirous to obtain the gods' aid. Each time the roofing of a grave is repaired the relatives pour a gourd of beer at the head of the grave, on the ground as a kind of dedication service.

The Heavenly Bodies. New Moon Ceremonies.

When the moon is first seen there is general rejoicing and a feast which lasts seven days, during which time no work is done; firewood, etc., is gathered and stored beforehand, so that the women need not go out to gather it, or do any work other than cook.

The *Kimbugwe* takes the *Mulongo* (placenta) to the king and presents it to him; the king takes the rude effigy into his hands, examines it, and hands it back to the *Kimbugwe*, who returns with it to its own house in his enclosure and places it in the doorway, where it remains all night; next morning it is taken from its wrappings, smeared with butter, and again placed in the doorway until the evening, when it is wrapped in its usual bark cloths and restored to its proper resting place.

The *Mukwenda* (earl of Singo) takes the royal shield which is under his care to the king and hands it to him, the king examines and returns it to him to be restored to its place. *Mukwenda* does this also when the moon is full, *ngabogabo*; on this occasion he must fast that evening and also abstain from sexual connection with his wives.

The evening the moon is first visible the mothers take out their babies and hold them out at arms' length saying, "I want my child to keep in health until the moon wanes."

All the *Mayembe* of the *Lubare* (horns of the gods) are also brought out and exposed to the moon. The people dance and sing each night during the seven days' feasting and cessation from work.

At *Magongo* in the district of Singo young people go into the forest, build huts, and remain there seven days. During this period they eat only plantains from the *Magongo* hill, which they say are the original roots *Kintu* brought with

him to the earth. No one is allowed to live on the Magongo hill except one of the priestly family, who is chosen by the clan and who when he dies is also buried there.

Fire-flies are said to be bits fallen from the stars.

The sun is said to fall into a hole in the west where it is fed on plantain peelings. During the night it runs across the land and is ready for its duties next morning.

Miscellaneous.

When the king sneezes everyone present must do the same. If any person sneezes at home he says *kabaka* (the king).

A man who has both father and mother living must not cut the nails of his hands and feet on the same day.

No woman is allowed to hand a man or boy any food without first wrapping it in a bit of plantain leaf.

In each house the owner has his own particular seat where no one, not even a son of the owner, may sit; should anyone do so he is promptly asked if he has come to inherit the place.

If a woman steals the *ekonero* (stone on which the sponges are made from the plantain stem) from a garden, when discovered, if she be an unmarried person, she becomes a domestic slave to the woman from whom she stole the stone; should she be a married woman her husband must restore the stone, and take a white goat and tie it up to the spot where the stone lay.

Men's Duties.

Besides working two or three months each year for their chief, and going to war, men find numerous duties to fill up their time at home, though the latter are not compulsory. Many men have some trade at which they work; some are carpenters and make stools, knife handles, hoe handles, clubs, and spear shafts, others are canoe builders, or drum makers. Again, there are tanners and leather workers, who in earlier times dressed all the skins of cows, goats, or wild animals, which were the sole clothing of the Baganda; they also prepared those used for mats to sit upon, or for making sandals worn by the wealthy; others were smiths, who worked iron, brass, and copper, the metal is imported and re-worked; they make hoes, knives, spears, bracelets, and rude needles for stitching skins and bark cloths.

Thatching houses is also regarded as a trade, and no one undertakes this duty or that of beating the earth floors and round the doorways and outer walls under the eaves of the houses but the *basamba* (floor beaters) and fully qualified thatchers.

Pottery is also an art which passes from father to son. Potters make pots of all sizes for cooking, those for carrying water, milk, and beer, and tobacco pipes. The pots are remarkably true considering they are fashioned by hand, and the wheel is unknown to them. The decorations on pottery are simply scratched on with a knife, or by making an impress with a plaited cord. The pots are dried in

the sun and baked by heaping dry grass over them and firing it. A glaze is obtained by painting some juice over them and re-baking them.

Every man knows how to make bark cloths, and is expected to provide them for his wife and family, both for clothing and covering by night. The tree from which the bark is procured is a kind of fig which grows freely in every part of Uganda; the best kind, however, only grows in Sango, a part of Budu. The trees are at their best when about 8 feet long in the trunk, and 6 inches diameter; they bear one bark each year for six years, the third one being the finest quality.

The method of making the cloth is as follows:—The outer bark is scraped off the tree trunk, and the inner one, which is about three-eighths of an inch thick, is removed in one long strip, and left to harden all the night; the tree trunk is wrapped round with plantain leaves and a new bark grows; the morning after its removal from the tree the inner side of the bark is scraped and the bark beaten on a log, having a flat surface made on it, with a round mallet in shape like a stone mason's, which has grooves running round it. The man goes over the bark three times, using a different mallet each time in which the grooves are finer; after the third course of beating the bark is thin like a piece of coarse calico, all holes are patched and the cloth exposed to the sun by spreading it on the ground; the effect of the sun is to give the upper side a beautiful terra cotta tint, whilst the under side is much lighter, almost yellow. The bark cloth is cut so that the two pieces, when stitched together, form a square of about 6 or 7 feet. Sometimes patterns in black, from clay found in the swamps or from a preparation made from charred wood and oil, are painted on the cloths to make them more valuable.

When men are travelling, either their wives or boys carry their bundles of clothes, whilst the men are armed and ready for any emergency or attack, either from men or wild animals.

Dress and Decorations.

The national dress for many years has been the bark cloth, the men wear it with two ends knotted together over the left shoulder, passing under the right arm and the opening down the left side kept together by a belt or girdle. Underneath this men and boys wear a string round the waist and a narrow strip of the bark cloth passed between the legs and fastened to the string before and behind; the latter is often the only clothing worn by men who are at work, whilst small boys seldom wear more.

Women until they marry wear no clothes except a waist ring made from the fruit stem of the plantain and covered with water lizard, or goat skin; married women wear the bark cloth wrapped round the body passing under the arms, and fastened by a girdle.

Previous to the bark cloth industry skins were worn by men and boys either of domesticated or of wild animals; royalty wore leopard and lion skins, and married women wore goat skins. Only gate-keepers wear skins since bark cloths have become the ordinary dress; cow or antelope skins have become their uniform.

The men seldom wear any ornaments, here and there a man may be found wearing twisted wire bracelets, and round his neck a few fetishes on strings; the latter are often decorated with beads. Originally women wore necklets of coloured seeds red and blue worked on to pieces of the fruit stem of the plantain; these are replaced by beads; they also had them made of water lizard skins, also brass, copper and ivory bracelets and anklets. Children wear necklets, anklets, and bracelets made from water lizard skins, and babies learning to walk have small bells on their wrists and ankles.

Neither the men nor the women bore their ears, lips, or noses, nor do they extract or chip their teeth, customs common to so many Bantu tribes. A few of the women scarify their stomachs to a pattern like a large W; it is said to be done by the women to please their husbands. Medicine men are paid a small fee to perform this work. The king's wives are not allowed to undergo the operation; it is said women who can bear the pain are capable of killing him.



SCARIFICATION MARKS OF
BAGANDA WOMEN.

a. Breasts.

Cattle Herding, etc.

All the Baganda keep cattle, both rich and poor have herds of goats and sheep; chiefs put their animals out to be housed and herded by their retainers, who receive a percentage of the offspring in remuneration for their trouble; every third kid or lamb, as the case may be, goes to the keeper of the animals. Both goats and sheep are housed by night in the huts, tied by one foot to short pegs, which are driven firmly into the earth floor round the sides of the dwellings. The women tie up the animals each night and loose them in the mornings, and boys herd them until they are twelve or fourteen years old, when they cease to be goatherds and take up men's duties. If one of the animals dies during the night a woman does not say to her husband it is dead, but "I am unable to loose it," and he understands it is dead.

Women often keep fowls, but they do not take pains to rear them or in any way improve the breed, they are in consequence of little value. The more wealthy people keep cows, but they are entirely under the care of the Baimu herdsmen, who keep them away in the country where pasturage is good, and all the surroundings favourable for the herds; the cowmen bring their master milk each day, and butter from time to time which is used in cooking, and also for smearing on the body. Chiefs keep two or three cows in milk in the capital, but frequently change them, because the pasturage is bad, and the animals suffer from various cattle diseases.

Market Places.

There are three or four market places in the capital to which the people are expected to take their wares for sale. Each market place is under a large tree commanding one or more of the highways leading to the capital; a chief

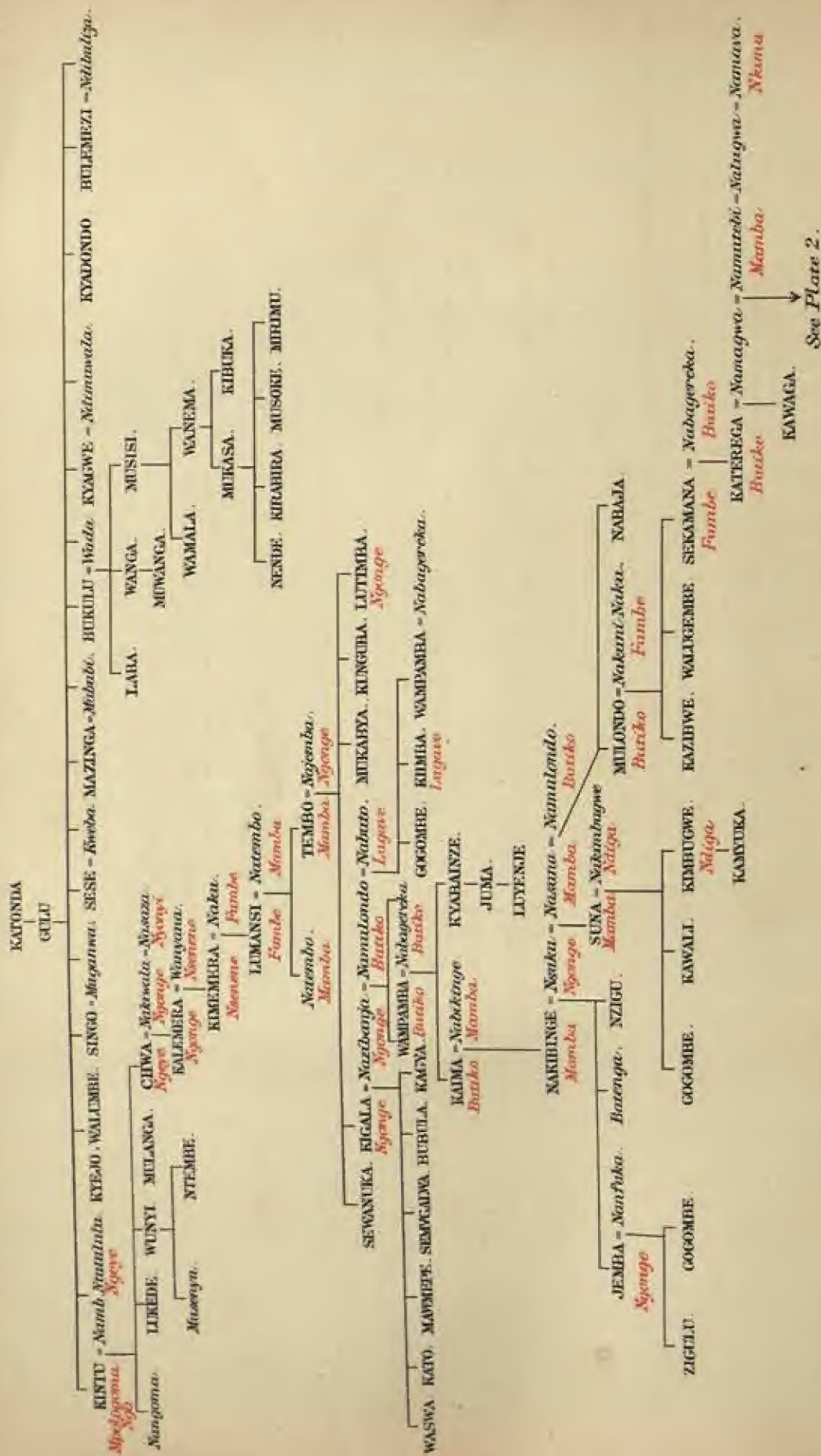
appointed by the king rules over each one, he takes a tax upon all sales of goods, keeps order in the market; to him any appeal can be made in any dispute about pieces, etc., and he has power to confiscate the goods of anyone who sells them privately and has not paid his market dues.

The principal things offered for sale are meat, plantains, potatoes, coffee berries, beer, tobacco, sugar cane, dried fish, salt, cooking pots, firewood, and bark cloths. In various parts of the country, especially along the shores of the lake, there are places where markets are held periodically; people bring their goods for sale from the islands or from various parts of the country; they are chiefly food products, which are bartered for other kinds of food; for example, the people from the islands take fish which they barter for plantains, etc.

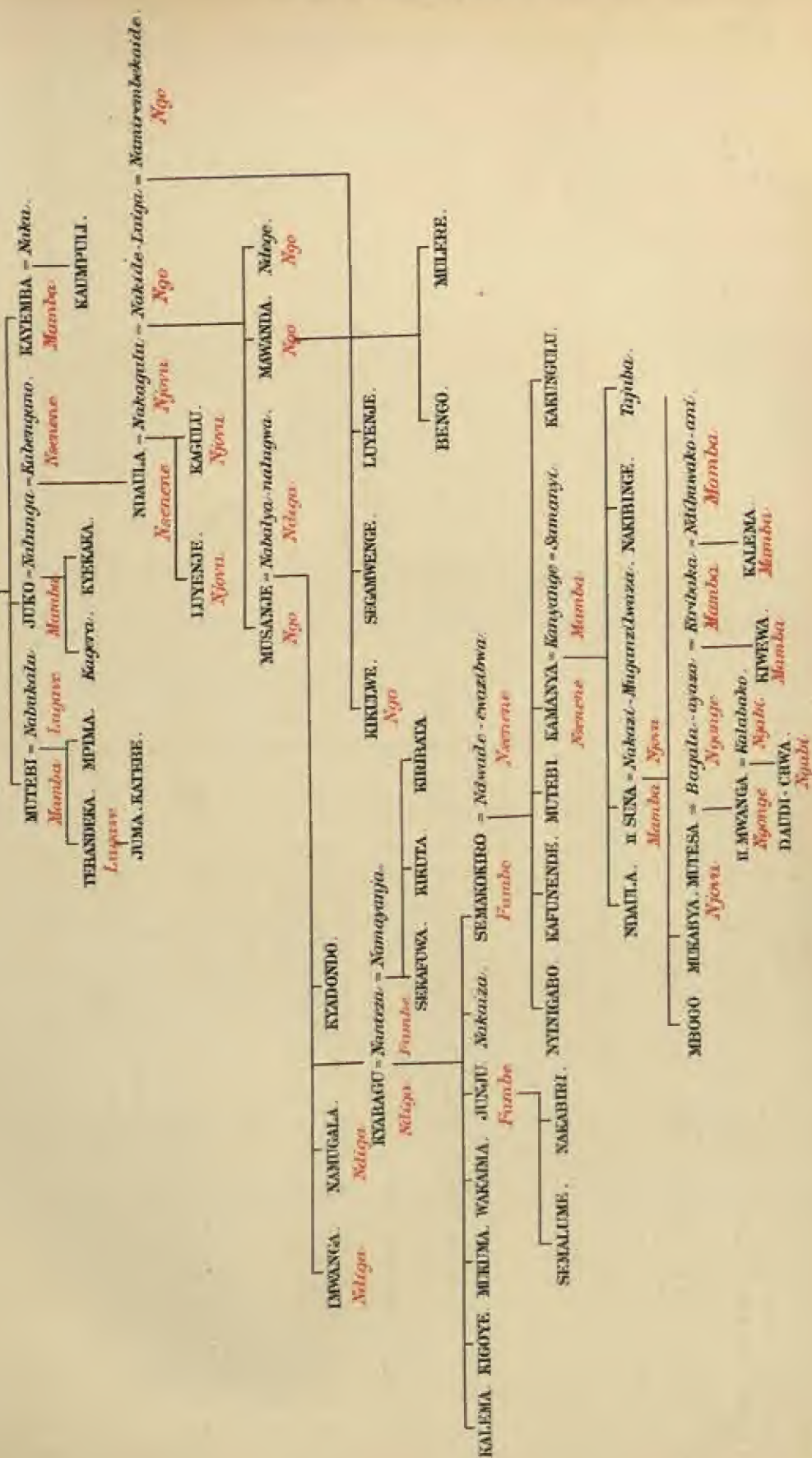
Sympathy between Human Beings and Plantain Trees.

In closing it may be well to draw the reader's attention to the sympathy which the Baganda believe exists between themselves and the plantain. All kinds of plantains used as vegetables are regarded as female, and those used for making beer as male; when children go through the ceremony of being named, the piece of umbilical cord, which has been preserved for this occasion, is put on a male tree if the child is a boy, and on a female tree if the child is a girl. A married woman who does not bear children is driven away by her husband because she will ruin his garden, and cause the plantains to cease to yield fruit. Again a woman who gives birth to twins is a source of blessing to the whole community. The ceremony after the birth of twins, mentioned above, in which the flower of the plantain is brought into contact with the male and female generative organs, and the subsequent dances, held in the gardens of favoured friends, in various parts of the country, show how strongly the people consider the trees are influenced by human beings. The plantain being the staple food of the country has naturally most attention paid to its fruitfulness and every care bestowed upon it is to make it yield more plentifully. One other case of sympathy may be also noted, that of a married woman of the green locust clan, with her totem cited under the head of food.

The writer apologizes for the incompleteness of the notes. Ill health and pressure of work made it impossible to do more at the time; he hopes in the near future to be able to continue the research and to add details which will make them of more value to science.



See Plate I.



NOTES UPON THE ANTIQUITIES OF TONGA.¹

BY BASIL THOMSON.

[WITH PLATES III-V.]

THE monuments in Tonga that have a claim to antiquity are the following:— (1) The Haamonga stones near Kolonga (East Tongatabu); (2) The artificial hill near Holeva at the mouth of the Mua Lagoon and similar mounds in various parts of the group; (3) The Langi, or tombs of the sacred kings (Tui Tonga) at Mua (Plate III).

(1) The Haamonga stones (Plate IV) have been so often described² that I shall only deal here with the question of their antiquity. The common tradition among the natives is that they were erected by the god Maui with stones that he brought in a giant canoe from Uea (Wallis Island), which is equivalent to saying that they know nothing at all about them, for on the principle of *omne ignotum pro magnifico*, Maui is made to take the credit for everything that they cannot explain. It is further alleged that in the reef at Uea the holes from which these stones were quarried may still be seen, and that the stone is of a kind not found in Tonga. This is not the case; the stones are, in my opinion, merely weathered coral, similar to that used in facing the Langi at Mua, but more roughly cut. Similar, though smaller, blocks may be seen on the reef where they were left lying ready for removal by the stone-dressing caste. In the *Voyage of the "Duff"* (1799), p. 283, the then Tui Tonga, Futtasaihe (Fatafehi Fuanu Nuiava) stated that the stones of the Langi were brought in a double canoe from the island of Lefooga (Lifuka) in the Haapai group; possibly some of the smaller stones were so brought, and the fame of the exploit gave rise to the Maui myth.

Such stone is soft enough to be cut with the chisel and the handsaw when it is newly quarried, but, after a very few years of exposure to the weather, the lime forms upon it an external crust of surprising hardness. I believe that the Haamonga stones were quarried from the reef opposite their present situation, and set up by means of inclined planes of earth. Their purpose will always remain a matter for conjecture. At first sight they suggest a gateway to some sacred spot inland, but I have examined the bush for some distance in their neighbourhood,

¹ For the inception, arrangement, and references of these notes I am indebted to Mr. J. Edge-Partington.

² *Archæologia*, vol. xxxv, p. 496; *Proc. Soc. Ant.*, Lond. vol. ii, p. 75; *Ethno. Album Pacific Is.*, Plate LXXX.

and have found no trace of ruins, or stones of any kind. Moreover, the memory of sacred spots dies very hard in Tonga, and the natives do not believe them to have been a gateway. I have lately received from Mateialona, the Governor of Haapai and cousin to the king, a letter in answer to one of mine on this subject. He says: "Concerning the Haamonga of Maui, they say forsooth that a Tui Tonga (the sacred line of chiefs), named Tui-ta-tui, erected it, and that he was so named because it was a time of assassination.¹ And they say that he had it built for him to sit upon during the Faikava (ceremony of brewing kava), when the people sat round him in a circle, and that the king so dreaded assassination that he had this lordly seat built for himself that he might sit out of the reach of his people. And this, they say, is the origin of the present custom of the Faikava, it being now forbidden for anyone to sit behind the king" (the presiding chief sits at the apex of an oval). Mr. Shirley Baker told me that he believed the Haamonga to have been erected as a *fakamanatu* (memorial) to the son of some Tui Tonga, a view that finds support in the fondness of Tongan chiefs for originality in the burial ceremonies of their near relations—witness Mariner's account of the funeral of Finau's daughter (vol. i, p. 373)—but on the other hand native traditions generally have a kernel of truth, and the legend of Tui-ta-tui and its consequences finds an analogy in our own custom of guarding against an assassin's dagger at the drinking of the loving-cup.

I have, unfortunately, mislaid my notes containing the measurements of the Haamonga stones, but in 1884 the passengers of the SS. *Wairarapa*, on a yachting cruise from New Zealand to the South Sea Islands, published an anonymous pamphlet entitled *The Wairarapa Wilderness*, from which the following detailed account of the monument and its dimensions is extracted:—

"The shape of the monument at first sight appears to be identical with the form so well known at Stonehenge, namely, two upright stones with a third one lying across the top of them, but a moment's observation shows a very marked difference. Instead of the upper one being merely superimposed, in this case it is carefully inserted into the other two. A groove about two feet wide has been cut in each upright stone, and the upper stone, which has been carefully cut to the right size, has been placed in it, so that the ends are about flush with the outside of the perpendicular stones, while the top is about flush with the top of the stones; but, owing to the easternmost stone being a little lower than the other one, probably from breakage, it rises a little above it on that side. The horizontal stone lies east and west, and it is noticeable that, either by accident or design, there is a slight though perceptible inclination of the faces of the perpendicular stones towards the north, *i.e.*, the north end of the opening between the stones is slightly narrower than the south end. On the centre of the top of the horizontal stone a hollow has been scooped out about the size of a coconut shell, and about $1\frac{1}{2}$ inches deep, though whether this hollow has been part of the original design, or has been made at a subsequent period, it is impossible to say. Owing to the pressure of time and the absence of any correct tape or ruler, the measurements taken must be considered as approximate; they are, however, roughly as follows:—Height of the perpendicular stones, 14 to 15 feet; depth of the horizontal

¹ *Tui-ta-tui*, lit. "King-strikes-king."

stone, 4 feet 6 inches; distance between the perpendicular stones, 10 feet; base of the perpendicular stones, north-east side, 4 feet, north-west side, about 12 feet, or probably less; breadth of the perpendicular stones at the top, 7 feet, probably more. Thus it will be seen that the space contained between the three stones is nearly a square, if not absolutely so. . . . It seemed that there were some indications of a trench on both the north and south sides, and also that the trenches were part of a large circle, the stones being at the northernmost end (the end nearest the sea), but these indications are so faint that without further examination it would be impossible to pronounce with any certainty upon this.¹ The stones are situated about 80 yards from the sea-shore."

Age.—The fact that no detailed tradition of the origin of these stones survives does not argue any great antiquity. Mr. Abraham Fornander, it is true, professes to have traced traditionary Polynesian history for more than ten centuries, but my experience is that, beyond a doubtful list of kings' names, tradition does not carry us back for more than seven or eight generations, and that beyond this limit we are apt to step into the region of mythology. The name of Tui-ta-tui does, however, occur in Mr. Moulton's list of the Tui Tonga,² as preceding Takalaua (*circa* 1535) by eight generations. In historical times the generations of the Tui Tonga averaged twenty-seven years, and on this computation Tui-ta-tui was living in 1319. But in those troublous times the kings must have trod closer upon one another's heels, and Tui-ta-tui's reign may more plausibly be assigned to the latter half of the fourteenth century.

But though the Haamonga monument is thus assigned by native tradition to the fourteenth century, there are considerations which point to a later date. For the quarrying and mortising of stones weighing some 50 tons apiece the craft of stone-cutting must have been fully developed. In Mariner's time (1810) the *Tofunga ta muka* (stone-vault masons) were a caste apart (see vol. ii, chap. viii), but the despotic power of the chiefs was then declining, and they were not called upon to execute any notable public work. Their greatest achievement was the larger of the two Langi built in the reign of Telea, of which one contains his body, and the other is still tenantless. If this Telea is identical with Uluaki Matatelea, the successor to the king who entertained Tasman in 1643, the craft of stone-dressing may be said to have reached its culmination at the end of the seventeenth century. The Langis of the kings earlier than Telea are poor in comparison, and the stones are small, irregular, and roughly quarried. It is therefore difficult to conceive that so fine a work as the Haamonga can have been executed by craftsmen who could not build a decent tomb for their kings, unless the craft of quarrying had declined between the fourteenth and the seventeenth centuries, and had had a renaissance, which would be contrary to all our knowledge of native craftsmanship. Yet, when one is left to choose between a definite native tradition on the one hand

¹ I saw no indications of this circle or trench. The inequalities of the ground seemed no greater than would be accounted for by the disturbance of the soil in digging holes for the uprights, and perhaps in making an inclined plane for setting up the stones.

² See the Appendix to my *Diversions of a Prime Minister*.

and probability on the other for the assignment of a date, I would prefer the tradition. If the Tongans had invented the story as a mere expression for antiquity they would not have pitched upon Tui-ta-tui, about whom nothing else is recorded, in preference to Takalaua, Kau-ulu-fonua-fekai, or any of the kings who loom large in traditionary history. Whether the Haamonga was built for a throne or for a memorial, doubtless it is connected with the reign of Tui-ta-tui, who lived in the fourteenth century.

(2) *The Artificial Hill near Holeva.*—This is, I think, the first time that attention has been called to what I believe to be the oldest monument in Tonga. Among the mangroves on the western side of the entrance to the Mua Lagoon and about half a mile south-east of the Roman Catholic Mission station at Maofanga, near Nukualofa, there is an artificial hill about 15 feet high. The mound is so heavily timbered that its real character can only be seen by visiting it, which few people do, as it lies at some distance from any road, and it can only be approached at low tide. I made a second and more careful examination of it in May, 1900. Leaving the beach road at the ford at Holeva Point (the place where Captain Cook pitched his instruments in 1777, naming it Observatory Point in his chart),¹ we rode along the reef left bare by the tide until we came to a sort of wharf or causeway, which slopes down to high-water mark on the western shore of the lagoon. The causeway was built of coral lumps about the size of a man's head, about 6 feet wide on the top and from 40 to 60 feet long, sloping gently upward to the summit of the hill, and gradually widening to 12 feet. The hill itself is roughly quadrilateral, with rounded angles and almost perpendicular sides. It appears to be built entirely of rough lumps of coral, just as they are taken from the reef, but so carefully laid that, except in a few places, none had fallen out. The summit was quite flat and covered with black mould. It was so choked with undergrowth and creepers that it was impossible to measure it accurately, but it seemed to be about 60 feet from north to south and 40 feet from east to west. The causeway joined it about the middle of the eastern side. In Captain Cook's time it was "overgrown with low trees and shrubs," but the trees at present growing on it did not seem to be more than thirty or forty years old. In Cook's *Third Voyage*, vol. i, p. 289, it is described as follows:—"At this place is a work of art which shows that these people are capable of some design and perseverance when they mean to accomplish anything. This work begins on one side as a narrow causeway, which, becoming gradually broader, rises with a gentle ascent to the height of ten feet, where it is five paces broad, and the whole length twenty-four paces. Joined to this is a sort of circus whose diameter is thirty paces and not above a foot or two higher than the causeway that joins it, with some trees planted in the middle. On the opposite side another causeway descends, but this is not above forty paces long.

¹ *Third Voyage*, vol. i, p. 277.

and is partly in ruin.¹ The whole is built with large coral stones with earth on the surface, which is quite overgrown with low trees and shrubs, and from its decaying in several places seems to be of no modern date. Whatever may have been its use formerly, it seems to be of none now, and all that we could learn of it from the natives was that it belonged to Poulaho,² and is called Etchee." On p. 357 of the same volume Cook describes another of these mounds in the island of Eua: "On the most elevated part of the whole island, we found a round platform, or mount of earth, supported by a wall of coral stones. . . . Our guides told us that this mount had been erected by order of their chief, and they sometimes met there to drink kava. They called it Etchee." Again on p. 262 he describes similar mounds in the islands of Lifuka and Holeva in the Haapai group. At the foot of the former, he says, stood a stone which must have been hewn out of coral rock. It was 4 feet broad, 2½ feet thick, and 14 feet high, "and we were told by the natives that not half of its length appeared above ground. They called it Tangata-arekee (*Tangata eiki* = Chief) . . . that it had been set up and the mount raised in memory of one of their kings."

During my visit I questioned both Tungi and Fakafonua, the principal chiefs of this district and the repositories of much ancient lore, but neither was able to tell me anything about the hill on the Mua Lagoon.³ In the letter before referred to, however, Mateialona writes as follows:—"Concerning the matter you have written about, namely, the origin of the series of mounds in Tongatabu and Haapai, which we in Tonga call the Jia. The Jia at Holeva, now used as a rifle butt, is attributed to a Tui Tonga of a very remote period, who ordered the people to erect this Jia and called it Suimafua'uta. The numerous Jia that are near Maofanga belonged to his daughter, and are ascribed to a feast that used to be celebrated by the chiefs of old time." This is tantamount to a confession that the Tongans have no definite traditions about the Holeva mound, for if anyone could have got hold of a tradition it would have been Mateialona, who is very intelligent and takes some interest in antiquities. I have no doubt that the word Jia is identical with Cook's "Etchee." The J, which is now pronounced S, was used in Mariner's time as a hard Ch. Even in my time a few of the old men so pronounced it. Cook would have heard the word prefixed with the article "Koe Chia," or "'ae Chia," and he would easily mistake the last syllable of the article for part of the word, and have written it down as Echia or "Etchee." I am not sure of the etymology of the word, for the only Jia with which I am acquainted is an archaic word meaning "good," used ironically for bad or indifferent. It is probably connected with the Marquesan word for a public meeting-house, spelt "Ti" by Herman Melville ("Typee," p. 169).

¹ I saw no trace of this second causeway. The heap of stones on the western side I took to be blocks that had fallen out of the hill-face.

² The Tui Tonga, Pau.

³ Both of these chiefs have since died.

(3) *The Langi*,¹ or *Tombs of the Kings*.—Beginning at the outskirts of the village of Labaha on the Mua Lagoon, there stretches inland an irregular series of *malae* of one, two, or three terraces faced with coral blocks, according to their size. It is much to be regretted that no one has counted and mapped out these tombs with the names of their royal occupants so far as they are remembered, but a trace of the religious awe which once invested this hallowed ground still avails to keep it inviolate. The ancient custom was to clear the ground round every new *malae*, and after the interment to allow the undergrowth to swallow it up for ever. In Cook's map of Tongatabu the whole island is shown in cultivation except this spot, which then, as now, lay in the perpetual gloom of great ifi trees and dense undergrowth. To clear this away would not perhaps now be regarded as a desecration, but a proposal that I once made before I understood native feeling on the subject was very coldly received. Until it is cleared it cannot be properly surveyed. I have myself followed the chain of tombs for the distance of about half a mile, but on each occasion my guides said that there were others of smaller size still farther inland. The tombs increase in size and importance as they near the shore of the lagoon, and to seven or eight of the larger ones the names of the occupants can be assigned, but the identity of the smaller tombs inland is quite forgotten. Some of these are mere enclosures of stones, not squared, but taken haphazard from the reef.

I give here a photograph of the Langi of Telea (Plate V), which, strange as it may seem, contains no body, for Telea is buried in the Langi next to it. There is still a question whether the body of the beloved chief Tukuaho, who is buried at Nukualofa, shall not be removed to it.

Some of the first missionaries who went out in the *Duff* were present at the interment of Mumui in one of these tombs at Pangai (Maria Bay) in 1797, and their account of the ceremony is given in the *Voyage of the "Duff,"* p. 283. The body, wrapped in costly mats, was laid in a shallow grave in the middle of the highest tier, and the grave was closed with a massive slab. During my first visit to Tonga in 1886 I was told that a trader had violated one of the Langi and abstracted the skull from it, but I think the story doubtful.

The inland Langi are all tombs of the Tui Tonga, but a few of those nearest to Labaha belong to the Tui Haatakalaua, of whom the late chief Tungi, the father of Tukuaho, who died in June, 1900, was the representative. The most modern of the Langis is that of Laufilitonga, the last holder of the title of Tui Tonga, who died a Christian about 1840, and was buried in the poor and degenerate Langi which crowns the village cemetery. The title was finally abolished by the late king, George Tubou. It is impossible to assign a date to the oldest, though that there are some older than 1535 may be assumed from the tradition that Takalaua was assassinated about that date owing to his tyranny in

¹ *Langi* (*lit.*, the sky). This word was originally confined to the ceremony of burying the Tui Tonga; later it came to include the tomb itself. (Mariner, vol. ii, p. 225.) The generic name for burying-grounds and tombs is *Fuifoka*.

compelling his people to drag great stones from the Liku (the back of the island) which, at this point, is only one mile and a half from the Langi.

Captain Cook in his *Second Voyage* (vol. i, pp. 199–200) describes several of these burial mounds in Maria Bay in the extreme west of Tongatabu, and figures one of them on Plate XXVIII, which he describes as “of an oblong figure and enclosed by a wall or parapet of stone about 3 feet in height. . . . On the top of it stood a house . . . about 20 feet in length and 14 or 16 feet broad. . . . The stones with which the walls were made that enclosed the mount were some of them 9 or 10 feet by 4 feet, and about 6 inches thick.”

This was the great Faitoka of Pangai, in which Mumui and others of the Tui Kanokubolu (temporal sovereigns) are buried. It was sacred enough to be a sanctuary in time of war. Near it grew the historic tree under which the temporal kings were invested with their title at a solemn Faikava. The tree was blown down during the last king's reign, but pieces of the wood were inlaid in the royal chair at Nukualofa.

During the civil war which followed the murder of the Han, Tukuaho, in 1799, a number of people took sanctuary within this enclosure. Their assailants were afraid to desecrate the spot by setting fire to the house, but the apostate missionary Vason, who was with them, did so, and a terrible massacre ensued.¹ The place is still much as Cook saw it, except that the house has disappeared and the enclosure is no longer holy ground. A more detailed account is given in George Forster's account of Cook's second voyage, vol. i, p. 451.

From the Wairarapa pamphlet already quoted I take the following description and measurements of the Langi at Mua, which are accurate as far as they go:—

“The first we came to has its lower step, as far as we could roughly calculate, 18 inches in height, the step about 4 feet, and the topmost 1 foot. The stones are coralline and of different lengths, varying somewhat in thickness; some of the largest we measured are from 15 to 18 feet long and about 18 inches to 2 feet in thickness, in height varying with the steps. These steps varied much in the different pyramids, the lowest first being sometimes considerably lower than the others, and *vice versa*. The surface of the step, *i.e.*, the space between the tiers, sometimes 3 feet, sometimes more, had been carefully levelled and covered with coral gravel. The stones fit very closely, and are very regular at the top and bottom; this holds good with each tier. The corners of the first tumulus [pyramid] are formed by huge rectangular stones, which seem to have been put in position before they were finally faced. We notice that the corners are not always at right angles. We measured the external dimensions of three of the bases, and found them to be about two chains in length by a chain and a half in breadth; a fourth is even larger. . . . The largest stone we measured is 22 feet long, between 7 and 8 feet above the ground, and 2 feet in thickness. This is at the centre of the bottom step on one of the sides, and is considerably higher than its neighbours. It had become split in two [see fig. 1, p. 88], but the chief peculiarity in it is a deep hollow, the size and shape of a large chestnut mortar, perfectly smooth. It is impossible to say whether this is formed naturally or intentionally.²

¹ *Four Years' Residence at Tongataboo*, by George V—, p. 173, London, 1815.

² I think that this depression is a natural cavity, smoothed by the workman. It may have been lined with leaves and used as a freak for brewing kava during the funeral ceremonies.

" . . . In the middle of one mound lies a large flat stone, some 5 feet 6 inches square."¹

Speaking of the more ancient Langi on the inland side of the main road, the writer continues :—

"The seven grounds on the right differ in one or two points from the other two. The sides of one burial-place are surrounded by only one layer of stones, whilst there are four layers to at least two²; also, besides coralline slabs there are huge stone slabs of volcanic formation, placed indiscriminately side by side with the others."



FIG. 1.—THE DIVERSIONS OF A PRIME MINISTER.

(From *The Diversions of a Prime Minister*, p. 300. Reproduced by permission of Messrs. Wm. Blackwood and Sons, Edinburgh.)

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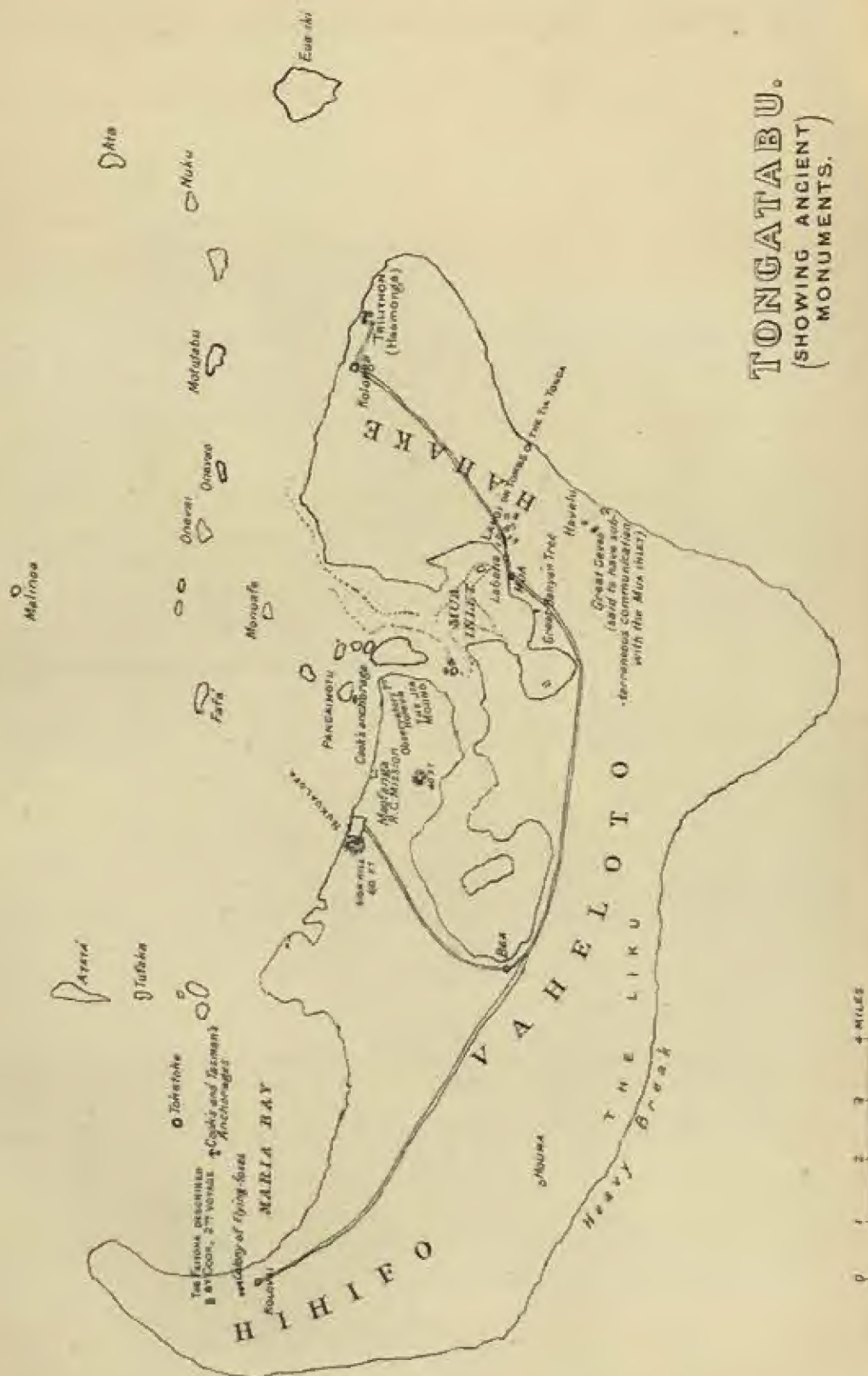
Plate III.—Map of Tongatabu (showing Ancient Monuments).

" IV.—The Haamonga Stones.

" V.—The Langi of Telea.

¹ The covering slab of the vault (see Mariner, p. 153 note).

² One of these four-tiered Langi is ascribed to a female Tui Tonga whose name is forgotten. It is to be remembered that these tombs were made during the lifetime of the chief who was to occupy them, and their size was therefore, to some extent, an indication of his power and influence. Telea, as has been said, actually had two of the largest built during his lifetime because the first one did not satisfy him.





Collotype by H. KLEINMANN & Co

The Haamonga Stones



SOME ANIMISTIC BELIEFS AMONG THE YAOS OF BRITISH CENTRAL AFRICA.

BY THE REV. ALEXANDER HETHERWICK, M.A., F.R.G.S., of the Blantyre
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THE original home of the Yao tribe may be roughly described as the large and lofty plateau which lies to the east of Lake Nyasa, and is bounded by the Rivers Rovuma and Lujenda. Forty years ago, about the time that Livingstone first entered the country, they began to be pressed on the north by the Magwangwara, and on the east by the Makuwa tribes. These invasions caused them to move, some westward down to the shores of Lake Nyasa or the banks of the Upper Shire River, and others southward to the Shire Highlands, Mount Zomba and the eastern slopes of Mount Mlanje. In every case they succeeded in either subjugating or expelling the original Maravi or Mang'anja inhabitants of these districts, and in no case have they lost their own independence.

Till about fifty or sixty years ago the Yaos were untouched by any external influences, and when at that time the Arab and coast trader from Kilwa and Zanzibar began to treat and trade with them they appear to have been little affected by contact with these visitors. Only a few of the younger men aped at following Mahommedan tenets, and these they only grafted on to their still cherished belief in the old faiths of their fathers. The Koran, or a few of its texts, was added to the many other charms they had already hung about their necks. The faith which the first missionaries found them in possession of when they entered the country twenty-five years ago may therefore be held to be the unadulterated creed of the tribe from time immemorial.

The foundation of the Yao religion is to be found in the *lisoka*, the soul, shade or spirit which every human being possesses, and which is the inspiring agent in his life. They profess to give no definite description of the nature or characteristics of this soul. In their minds however it is allied with the shadow, and would seem to bear to the body the relation which a picture has to the reality. Their word for a shadow is *chiwitili*, which is also the term that they use to denote a picture, and pictures they associate with the shades or shadows of the dead. I have known natives refuse to enter a room where pictures were hung on the walls "because of the *masoka*, souls, which were in them." The photographic camera was at first an object of dread, and when it was turned upon a group of natives they scattered in all directions with shrieks of terror. "The European,"

they said, "was about to take away their shadows and they would die." In their mind the *lisoka* was allied to the *chiwili* or picture, and the removal of it to the photographic plate would mean the disease or death of the shadeless body.

As an instance of their faith in the close relationship of the *lisoka* and the picture or shadow, I may relate the following incident. An influential Yao chief on Mount Zomba with whom I was on terms of intimate friendship for years, refused to allow himself to be photographed, fearing the consequences on his life. At last I was able to persuade him to give me a sitting, but on the sole condition that the picture was to be shown to none of his subjects but to be sent out of the country as soon as possible. He feared lest some ill-wisher might use it as a means towards his bewitchment. Some months afterwards the chief became seriously ill, and in the minds of his attendants his illness was attributed to some accident having befallen the photographic plate on which they believed the picture of their chief to be imprinted. If that negative had been broken in England, whither it had been sent, their chief's illness would be accounted for. Accordingly they appealed to the divining oracle, who, however, after consulting the "lots," assured them that the picture was intact, and that in consequence the disease must be ascribed to some other cause.

The *lisoka* or soul is recognized as the chief agency in dreams. To dream is, in the Yao tongue, *kusagamila masoka*, where *masoka* is the plural form of *lisoka*. The *lisoka* is supposed to go out and visit the scenes and persons it dreams about, and in turn is visited by the *masoka* of others, dead or living. Pains in the body on rising from sleep in the morning are usually attributed to such nocturnal visits, while disease or pains of a severe type are ascribed to castigations by the whips of the *masoka* or more frequently of the witches who prowl around during the night watches.

Madness, idiocy and the ravings of delirium or disease are accounted for by a similar agency. The sufferers are *wa masoka*, they of the spirits, and a sudden fit of epilepsy or insanity is described as *gakamwile masoka*, the spirits have seized him. Such persons are usually regarded with awe, as living in close contact with the unseen, but no incantations or enchantments are ever used to expel the spirit in possession. Some native doctors are credited with a knowledge of certain medicines which they say are effectual in such cases, but their application in no way differs from those employed in treating ordinary types of disease. Idiots and the insane are allowed to wander at will about the village, and only when violent symptoms show themselves as a danger to the community is any physical restraint put upon them.

The *masoka* are also recognized as the inspiring agencies in the ravings of the witch detective. This person, usually a woman, is called in to discover who is the guilty agent in cases of mysterious deaths or outbreak of an epidemic at a village. She arrives on the scene and takes up her abode for a few days previous to her actual demonstration. She mixes with the people, learns all the scandal and gossip of the community, and at night prowls about the houses searching for

evidence. On the appointed day she dances, *kuyina masoka*, to dance the spirits, or *kunecweta*, to rave or prophecy, and in the ravings of the dance she calls out the name of some party who is afterwards accused of being the *msawi* or witch. Followed by a crowd of excited spectators she dances through the village spear in hand, stopping here and there to dig up charms or medicines which the supposed witch has buried in the ground as the instruments of his occult practices. It is only in cases of supposed special difficulty, or when the magnitude of the supposed crimes demands that special measures be adopted for their detection, that the services of such a witch detective are called in. In ordinary cases these appeals are made to the divining oracle who consults his "lots" as a means of discovering crimes of this nature.

Among the Yaos the human being is believed to be the sole possessor of a *lisoka*. I have been unable to discover any trace of a theory that the *lisoka* may pass into any animal or inanimate object and thus confer upon it the nature or power of a fetish. Such belief is cherished among the Angoni and Achewa tribes to the westward by Nyasa and the upper Shire River, and the intelligent Yao is aware of this, but he states that among his people no such belief exists. Even charms which have the effect of healing or warding off disease, or of protecting the wearer from war or wild beasts or other danger by land or water, are supposed to possess this power without any idea of their being possessed by a *lisoka* or other spirit influence. The nearest approach to such a theory is in the case of certain powerful "doctors" who have obtained special medicine by means of which, at death, they can transform themselves into lions, leopards, crocodiles, etc. Lepers also are sometimes supposed to become hippopotami. But both of these cases must be regarded rather as transmutations of body than transmigrations of soul.

It will be thus seen that the nature of the human *lisoka* is closely allied to that of the *masoka*, which are the inspiring agents in madness and in the ecstasy of prophecy or incantation. What the origin of these inspiring *masoka* is, or to whom they belonged when in bodily life, the Yao holds no theory. He is content to accept them as they are, *masoka iyoyo*, "Just *masoka* and nothing more," as he says.

It is, however, when we follow the disembodied *lisoka* after death and consider its position and power in the other world that we find ourselves in a region of higher spiritual activities.

In dreams or in fainting fits the *lisoka* leaves the body but only to return to it with the awakening consciousness. At death, however, it leaves its earthly abode never to return. It is now spoken of as having gone to *mulungu* or *mlungu*. This word, which lies at the basis of all Yao theories of the place of the soul after death, will be dealt with later on as regards its derivation and connections in the Bantu family of languages. In its actual use it bears two significations.

I. The word *mulungu* is in the first instance applied to the human soul or *lisoka* after death when it is considered as an inhabitant of the spirit world. Even in life a man, when he meets with any piece of good luck, will be heard to say, "It's my *mulungu*," as if his soul had an influence in determining the character of his

present fortunes. But it is to the human soul after death, when it is considered as having an influence on the lives and fortunes of those it has left behind in the world and consequently as a power to be propitiated and honoured, that the term *mulungu* is more strictly applied. Freed from the body it passes to *mulungu*, and there is regarded as endowed with powers which it never possessed when alive on earth. To pray to such a spirit is described as *kulomba mulungu*, to worship *mulungu*, never *lisoka* in this case. Such *mulungu* worship enters largely into Yao religious or social life. In almost every Yao village there will be found a shrine which is the centre of the worship of the inhabitants. It consists of a carefully built hut enclosed within a strong grass fence or hedge of a species of cactus plant. The hut itself is built of the usual native materials—the walls of wooden posts, bamboos, and strong reed grass bound together with bark-rope and plastered over with clay or stiff mud. The roof is of grass laid on a framework of bamboos, and is generally covered with long strips of white or coloured calico. On the ridge or apex of the roof are fixed a couple of flags or an umbrella or two. One wall is usually left open so that the interior is easily seen. Within, from the bamboo rafters are suspended handkerchiefs, cloths, bunches of beads, etc., all offerings to the *mulungu* of the dead headman or chief from his friends and relatives. The floor is of clay carefully smeared with sand in native fashion. A raised platform or mound of earth in the centre marks the spot where the grave was made. The *awilo* or officials who preside at the funeral obsequies, first dug for about 8 or 10 feet down in a perpendicular direction, and then on the western side of this well they hollowed out a shallow cave in the earth. In this the body was placed, laid on its side with the knees bent up under the chin, and the face turned towards the east. Various articles of personal property were next placed beside the corpse, clothes, ivory, guns, axes, hoes, etc., and the mouth of the cave closed up with wooden posts and a strong reed mat. The grave was then filled in and the surface carefully finished as we have seen. At the head of the mound a native pot was fixed in the ground for the reception of the offering of beer which is an almost invariable accompaniment of any act of worship paid to the *mulungu* of the dead.

Such a shrine marks the grave of almost every Yao chief or headman, and is regarded as the abode of his soul or the spot where his *mulungu* is most accessible. If his successor is about to undertake a long journey or enter on any warlike expedition against an enemy or neighbour, he must first *kutaga mbepesi*, place an offering here to secure the favour and assistance of the *mulungu* of the dead. Should a long-continued drought endanger the prospects of the grain crop, the departed chief must be solicited to send the lacking rain. A feast is first prepared, almost always of beer, sometimes with the addition of native porridge, fowl, or game. The worshippers gather round the shrine bringing part of the food which they have prepared. Their priest for the occasion is the successor of the dead chief, sometimes one or other of the *awilo* who placed the body in the grave, or it may be that any other near relation of the dead man is chosen to represent the people and act as their spokesman. The nearer the relationship the more influence will he have

with the dead. He approaches the shrine, opens the gate of the fence, takes a potful of beer and pours it into the pot at the head of the grave. Next he places the basket of porridge and the plate of meat on the mound beside it and retires. Kneeling down outside the gate facing the shrine and a few yards in front of the people he chants his prayer in a monotone, each petition commencing with "Chonde, chonde," "Please, please." All the while the people clap their hands in unison with him and sing the response as they do in a native case in the chief's court.

When the offering has been made at the grave, the rest of the beer or other food is consumed by the worshippers. Guns are fired as a token of respect to the dead, and the rest of the day is spent in dancing.

Such shrines are to be seen in almost every Yao village where the inhabitants have been located for any length of time. They are regarded with awe—the little boys as they pass whisper to each other in a warning tone, "*masoka*." Should the village be moved to any other district, the old shrine is not forgotten. Periodical visits are made to it with the usual offerings. In cases where the old home has been occupied by a people hostile to the old inhabitants, such visits are usually made during the night, and the people awake in the morning to find that the old chief's grave in their midst has been newly repaired, and a fresh offering of food placed at its head.

Sometimes such shrines are found on the summits of hills which once may have been a refuge from the enemy in time of war, but which now lie lone and deserted. Thither in their need the people make their way with their offering of food and beer, and their prayer for rain or suitable weather for the crops. Near Blantyre such shrines are to be seen on the tops of Mount Sochi and Mount Michiru. The former is the abode of the spirit of Kankhomba, and the latter of Mpalale, both old Maravi or Mang'anja chiefs who doubtless fled there seeking safety from the war of the invading Yaos, and died leaving their *masoka* to be the *mulungu* or spirit of the mountain. Some years ago, during the fear of an Angon, invasion, the Yaos of Mount Sochi fled to the hill-top for refuge, and there the old chief Kapeni died. He was buried close to the grave of the old Kankhomba, and now, when the Yaos on Sochi make an offering, it is to the spirit of Kapeno that the homage is paid, and the shrine of Kankhomba lies neglected.

Only the graves of chiefs or headmen are thus treated as shrines of worship. The burying place of slaves and the common people lies away in the thick bush, where only the rank grass or the thicket of old trees marks the spot. No offerings are ever taken there, for such as are buried there can have no influence in the spirit world. The dead are buried, the broken pot or basket is left on the grave to mark the spot, and none ever seek to go there save to lay another in the same neglected ground.

II. But the word *mulungu* is used by the Yao with a wider application. Etymologically the word is connected with the root *kulungua*, which in so many of the other branches of the Bantu tongue appears as *kulu* or *kuru*, and signifies "great" or "old." It is the same root which appears in the Kaffir word for God,

Unkulunkulu, which may therefore be rendered as "The old, old One," or "The great, great One." A like rendering may be given of the Yao form *mulungu*, the "Old One," or the "Great One." In this or a modified form *muungu* (Swahili) it appears in all the Eastern group of the Bantu tongues as the equivalent for "God" (see Father Torrend's *Comparative Grammar of South African Bantu Languages*). To trace it as Father Torrend does to any connection with Moloch, the god of the Phœnicians, is to attach undue weight to a chance coincidence of sounds.

As we have already seen, the word *mulungu* is applied to the human *lisoka* when regarded as an object of worship, or as an inhabitant of the spirit world. But it is also used to denote that spirit world in general, or more properly speaking, the *aggregate of the spirits of all the dead*. The plural form of the word is rarely heard, unless when the allusion is made to the souls in their individualities. In its native use and form the word does not imply personality, for it does not belong to the personal class of nouns. Etymologically it is classed with the leg, heart, arm, head, etc., of the human frame. Its form denotes rather a state or property inhering in something, as the life or health inheres in the body. Among the various tribes where the word is in use as we have described, the missionaries have adopted it as the term for "God." But the untaught Yao refuses to assign to it any idea of being or personality. It is to him more a quality or faculty of the human nature whose signification he has extended so as to embrace the whole spirit world. Once after I had endeavoured to impress an old Yao headman with the personality of the Godhead in the Christian sense of the term, using the term *Mulungu*, my listener began to talk of "Che Mulungu," "Mr. God," showing that originally to him the word conveyed no idea of the personality I was ascribing to it.

And yet the Yao approaches closely to the idea of personality and a personal being, when he speaks of what *mulungu* has done and is doing. It is *mulungu* who made the world, and man, and animals. Far in the interior of the continent, toward the north-west, beyond the plains and swamps of the Loangwa River and Lake Bangweolo, there lies, in Yao legend, an island in the midst of a lake called Kapiritimya. On that island there is to be seen a large flat rock marked by the footprints of men and animals of all kinds. When that rock was once a heap of moist clay, *mulungu* created all living things and sent them across the soft mass, where their footprints remained to be afterwards hardened into the imperishable rock. Such is the Yao legend of the creation of the world, and *mulungu* is always the Great Creator.

Mulungu is also regarded as the agent in anything mysterious. "It's *mulungu*," is the Yao exclamation on being shown anything that is beyond the range of his understanding. The rainbow is always "*mulungu*," although some Yaos have begun to use the Mang'anja term "*uta wa Lesa*," bow of Lesa.

Offerings are made to the spirit world or to *mulungu* as the great agency in the affairs of human life. Outside the village, or beside the headman's hut, may often be seen a rough shed. In this are placed the first-fruits of the new crop,

green maize, beans, pumpkins, peas, etc., as a thankoffering from the villagers for their harvest. This is described as *kulomba mulungu*, to worship *mulungu*. At the foot of the tree in the village courtyard, where the men sit and talk or work, an occasional small offering of flour or beer is placed on any special occasion in the life of the village or any of its inhabitants. This also is *kulomba mulungu*. A devout native sitting down to a meal will, before beginning to eat, take out a small morsel of the food before him and throw it at the root of the nearest tree as an offering to *mulungu*. On a journey a traveller will sometimes stop and lay a little flour in a pyramidal heap at the foot of a tree by the wayside or at an angle where two roads meet. This, like the others, is for *mulungu*, the spirit world, the guardian of the wayfarer on his journey.

Thus the Yao presents us with three stages of animistic belief:—

(1) The human *lisoka* or shade, the agent in dreams, delirium, etc.

(2) This *lisoka* regarded as *mulungu*, and an object of worship and reverence, the controller of the affairs of this life, the active agent in the fortunes of the human race.

(3) And lastly, *mulungu* as expressing the great spirit agency, the creator of the world and all life, the source of all things animate and inanimate.

And yet between these three conceptions of the spirit nature no definite boundary line can be drawn. The distinction in the native mind is ever of the haziest. No one will give you a dogmatic statement of his belief on such points.

It is only through long association with them in their daily life noting actual expressions of opinion or hearing of definite acts in relation to their worship or their dead, that one can get behind the reserve with which every Yao man or woman approaches or alludes to the spirit world which lies beyond and after this.

THE KANETS OF KULU AND LAHOUL, PUNJAB: A STUDY IN CONTACT-METAMORPHISM.

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[PRESENTED MAY 13, 1902. WITH PLATES VI-VIII.]

I.—INTRODUCTION.

THE intrusion of a foreign type into an already populated country results in, to use a geological simile, a series of "contact effects," whose nature and degree must necessarily depend on certain variable factors. The valuation of such ethnic contact-metamorphism has very seldom been subjected to quantitative analysis, and most studies in this direction, being based on political, linguistic or purely national variations, have failed to touch the question of racial modification due to ethnic fusion. In making a study of one such instance of contact-metamorphism, the writer assumes that the principle which forms the working philosophy of the comparative anatomist may be legitimately extended to ethnological problems—that similarity of organization and physical characters implies relationship by descent. Ethnologists, more than most students of natural history, have been slow to recognize this law, partly because our earlier ethnographic data were mainly those relating to language, manners and customs, all of which are, on account of their mutability, of subsidiary value for purposes of classification.

The people who form the subject of this note offer an instance to the point. Sir Alexander Cunningham¹ referred the ancient remains found in the present area of Kanet occupation to a people variously called *Mowas*, or *Mons*, or *Motans*,² and said all agreed that these people were the Kanets themselves, whom he consequently, on the basis of this similarity of name and imperfect correspondence in two or three words in their languages, identified with the Mundas of Eastern India, people who differ from the Kanets in physical characters to a degree not easy to parallel in India. Even the easy-going Kanet would resent, if he knew of it, this attempt to place him with the thick-lipped, platyrrhine, stunted, black Munda of Chota Nagpur.

Dr. Oppert, using the same treacherous line of argument, first demolished the above conclusions, and then proposed one essentially similar and equally far from what is the probable truth. Dr. Oppert, in his work *On the Original Inhabitants of Bharatavarsa*,³ derives the name Kanet from *Ku*, mountain, and thence groups the Kanets with his Gaudian division of the Bharatas, along with a crowd of heterogeneous anthropological types, such as the Kurumbas, Kurubas, Kodagas (Coorgs), Khonds, Kotas, Kurmis, etc.

¹ *Reports, Archaeological Surv., India*, vol. xiv, 125-135 (1882).

² According to Csoma de Korosi, "the hill people who dwell next to the Tibetans are called by them by the general name of *Mon*." (*Journ. Asiatic Soc., Bengal*, i, 122.)

³ Pp. 213, 214.

This paper merely touches an internal question affecting the Kanets, and does not discuss the broader problem as to the relation of these people to the tribes of the Hindustan plains. Materials for the solution of this question will probably appear in the course of the ethnographic survey now being directed by Mr. H. H. Risley. But I think it necessary to take this opportunity of protesting against generalizations of the kind just quoted, in view of the fact that the Indian populations have recently been victimized in a similar way by a distinguished member of this Institute in two books which otherwise deserve respect for the valuable summary of ethnological and philological facts which they contain.¹

In a general way we know that a pure-blooded type exhibits an uniformity amongst its subjects which contrasts with the great individual variations displayed by a recent racial blend. And we assume, on *à priori* grounds, that the average result of an ethnic cross will be intermediate in all points between the constituent races. But some characters are possibly more susceptible to metamorphism than others, and possibly in no case is there an arithmetical mean. The practical difficulty implied by this general complaint will be more apparent from an example within my own experience. In India the researches of Mr. Risley distinguished, as long ago as 1890,² three distinct elements amongst the native populations, and subsequent observations, by the same distinguished authority and others, confirmed this analysis. But in 1898 I found, in the Coorgs, an isolated race which could not be relegated to either of the three previously recognized types, and whose origin, for lack of means to identify the constituents of a blend, I was compelled to leave an open question.³ For the time the question of the origin of the Coorgs, and their relationship to the other known tribes, offered a special difficulty on account of their isolated position and unique characteristics amongst the people of South India. Amongst other features in which they differed from the previously measured tribes of Peninsular India, was their strong tendency to brachycephalism, a feature hitherto not recognized away from the Mongolian frontier zone.⁴ Their geographical position and the absence

¹ *Ethnology*, 1st ed., 1896, p. 417, and *Man Past and Present*, 1899, pp. 557 to 560. The observance of linguistic characteristics as a leading feature in classification compels the author of these books to group, for instance, the Kolarian Oraons with Kashmiris, Punjabis, Gujaratis, Mahrattas, Hindis, Bengalis and Assamis, names which are of various racial values and suggestive of heterogeneous mixtures of essentially distinct types; whilst the Dravidas are made to include the Coorgs with the Gonds, the latter being a people physically similar to the Yeruvats, who, as I have shown elsewhere (*Journ. Asiatic Soc., Bengal*, lxx (iii), 1901, 59), are utterly distinct from the Coorgs. The Coorgs, as a matter of convenience, speak a form of the Dravidian languages of South India, but do not resemble their neighbours physically.

² Risley: "The Study of Ethnology in India," *Journ. Anthropol. Inst.*, vol. xx, 235-263 (1890).

³ Holland: "The Coorgs and Yeruvats, an ethnological contrast," *Journ. Asiatic Soc., Bengal* lxx (iii), 1901, 59-98.

⁴ Messrs. Risley and Thurston have, during the past year, independently obtained measurements which show a noticeable degree of brachycephalism in the central part of the Indian Peninsula where the Mahrattas have had great influence. The Mahrattas agree with the Coorgs in many points besides their warlike characteristics, and it is probable that the latter are but an extreme "outlier" of the former, so the origin of the two will now form a common problem.

of concomitant Mongoloid characters—an appreciable degree of platyopy, for instance—rendered it unlikely that the Coorgs were the result of any recent Mongoloid cross. One assumes that when Mongoloid blood is introduced and brachycephaly results, platyopy and other Mongoloid characters should simultaneously appear. To test this assumption was the object of the investigation recorded in this note. In the case of the Coorgs there was no reason for expecting evidence of Mongoloid blood, and their high degree of pro-opy agrees with that assumption. In the case of the Lahouli Kanets Mongoloid blood certainly has been introduced, and their naso-malar indices, being lower than those obtained on their Kulu caste equivalents, there is positive evidence that an increase of brachycephaly, due to the introduction of Mongolian blood, is accompanied at the same time by a tendency to platyopy and other peculiar Mongoloid characters.

All the caste Hindus in India are in reality the result of contact-metamorphism, and in consequence of the fact that they are the result of a comparatively recent blood mixture, they show a greater irregularity and internal variation in physical characters than we find amongst the pure-blooded jungle tribes. Strict endogamy in a caste tends to anneal the constituent elements and produce uniformity of type without affecting the average; so that analysis of the individual measurements should give us an index to the degree of annealing which has taken place. But the case which I have selected for study is slightly different to that of any well-defined caste in India. The Lahoul Kanets are suspected of including pure elements—pure Indians who have not been tainted with Tibetan blood, as well as Hinduized Tibetans who are not the result of intermarriage. The subjects measured show that this is probably true to a very small degree; most of them show a compound nature, whilst in a few the Indian characteristics are uniformly preserved, and in a still smaller proportion the pure Tibetan type is pronounced. I think this conclusion is reliable from the qualitative point of view; but my data are far too few to permit of a safe quantitative estimate. My anthropometric work was necessarily subordinated to the geological investigations for which I was primarily deputed for a short season to this part of the Himalayas; but so far as they go I think they show that such cases of anthropological contact-metamorphism would certainly repay a detailed survey, and I strongly recommend this branch of anthropology to those who may have the opportunity for research.

The general characters of the people of Kulu and Lahoul have been described by Captain A. F. P. Harcourt, who, in his *Himalayan districts of Kooloo, Lahoul and Spiti*, has given a very full and graphic account of the country and the people. His work and the observations by Sir Alfred Lyall will be found summarized in various gazetteers, and need not be repeated. I have attempted merely to supplement their ethnographic work by an anthropometric survey. For help to this end I am greatly indebted to Mr. H. H. Risley, Census Commissioner of India, who lent me a set of instruments, and to Captain and Mrs. Roe, who gave me invaluable help during the course of the work.

It would be unwise to treat this problem as one of contact-metamorphism

without considering an assertion which might possibly be made, namely, that the Lahoulis are not the results of blood fusion at all, but are merely Tibetans who have become Hinduized. Such a conclusion can only be granted on the assumption that our ideas of caste exclusiveness are false, and it would be, moreover, contrary to what may now be seen in the way of intermarriage in this area. Although practically all castes in India have been modified and none are as pure as their claims pretend, it would be impossible for a whole tribe to identify themselves in this way by mere change of religion with a neighbouring caste, and even were such the case, intermarriage would begin at once and all the phenomena of metamorphism would take place. It is more likely that, as in other castes, the fusion has originated through the delinquencies of a few at the border, and has gradually extended under the circumstances rendered favourable by political and industrial unity. That the Lahoulis are the result of true fusion appears likely, too, from their measurements: all the Tibetans we know are much more brachycephalic, more platypic and of a different skin colour; the number of distinctly Mongoloid faces one meets amongst Lahoul Kanets is also small, no more, in fact, than one would expect as the result of atavism.

II.—CONDITIONS OF CONTACT.

Along the Himalayan frontier of India the dolichocephalic people of the plains meet the brachycephalic tribes who inhabit the highlands of Tibet. The roads through the passes permit a considerable amount of commercial intercourse, a commercial overlap from which no caste system could possibly exclude a certain degree of racial fusion. We have no exact ethnographic data so far for the people of this zone, but a general knowledge of them permits a very interesting generalization. Mr. Risley, in his well known work, *Tribes and Castes of Bengal*, and in his review of the subject before this Institute, in a paper which one admires from a literary, no less than from a scientific, point of view, has indicated a gradual fading out of dolichocephalism in corresponding castes when traced from the Punjab, south-eastwards, to Bengal. The high castes of the Punjab are most distinctly and uniformly dolichocephalic, whilst those in Bengal, even Brahmins with their index of 78·7, show a marked tendency to brachycephalism. His explanation, that the fair-complexioned foreigners, who called themselves by the name of Arya, and who invaded India by the north-west gate some four thousand years or less ago, succeeded in leaving more complete relics of their blood in the Punjab than in the provinces further south-east, seems to agree, so far as that portion of his argument goes, with all later observations, as well as with the testimony of the Hindu classic writings. This part of Mr. Risley's conclusions may be re-stated in another form and with a corollary: the Mongoloid frontier, instead of being driven back to the Central Himalayas as in the Punjab, has retained its influence in Bengal to the southern foot-hills and even to the plains, where the Aryan impact was presumably less felt. And as a rider: the zone of "contact-products" between the two types is narrower in the

Punjab than in Bengal, or, in other words, the boundary line on an ethnographical map would be sharp in the former province, but impossible to demarcate with precision in Bengal. It is the narrower part of the zone where the contrasts are sharper, that I, as a geologist, should first select for a study of the effects of contact-metamorphism.

The people I have selected for study, the Kanets, are sufficiently numerous to have well established characteristics, and are not likely to be affected by small and accidental infusions of foreign blood; they are spread out along one of the great Central Asian trade routes, permitting commercial intercourse with the people of the interior. At the same time the two particular areas selected for comparative survey along this route are separated from one another by a strongly marked mountain ridge, which draws a sharp line between the Kanets of Kulu, who have free intercourse with the purer members of their own caste on the Indian side, and those of Lahoul, who are in communication with the Mongolian people of the interior. Between these two areas, there being a large intercourse during the summer, migrations have taken place freely; and, both being parts of an administrative unit, with similar systems of land tenure, there is an unusual opportunity for actual fusion. In studying such a case of modification near a frontier it is probably more instructive to select, as I have done, the type, or normal, subjects from as near the frontier as possible; for these are the nearest relatives to the people on the other side. If one measured, for instance, the Kanets of Simla district and compared them with those of Lahoul, the contrast would probably be very strong; but that would not test the proposition under consideration, as there is probably not a family in Lahoul that has immigrated directly from Simla. It was my aim to establish the characters of the Kanet type in Kulu, a place which physically resembles the natural home of this people, and contrast them with the essential characters of the Lahoulis, who, though neighbours, live in an area physically similar to that which forms the home of Mongolian peoples of the interior. The ridge between Kulu and Lahoul is a sharp physical boundary, the countries on opposite sides of this ridge being as dissimilar as they possibly could be, whilst with the two peoples under the same form of administration, intercourse is facilitated and racial fusion permitted. Thus, whilst the climate and physical features of Lahoul suit a Mongolian tribe, the political and social conditions are those congenial to the Kanets, and the conditions for fusion are ideal.

A short description of the two taluks, Kulu and Lahoul, will help to an understanding of the way in which contact-metamorphism is brought about, and the degree to which it is possible. Both are under the charge of one Assistant-Commissioner, and for administrative purposes they are included in the Kangra district of the Punjab. In Lahoul the old rule of the Thákurs survives in a modified form by the appointment of the heir of Tara Chand, with powers similar to those of a Tahsildar in an ordinary British district. Lahoul has been under the sway of Kulu since the beginning of the eighteenth century, when it

was incorporated by Budh Singh, son of the Kulu Rája, Jagat Singh, a contemporary of Sháh Jehán and Aurangzeb. Both came under British rule in 1846.

The two taluks are separated by a snowy range of peaks, rising often over 20,000 feet; and in one saddle, the Rotang pass, 13,326 feet, the main, practically the only, means of communication lies. This is the great trade route which passes from the Punjab through the valley of Kulu and thence by Lahoul to Ladakh and the Central Asian highlands. The ridge on which the Rotang pass lies separates two utterly distinct countries. On the one side we have the dreary desolate grandeur of Lahoul—deep gorges, with roaring rivers of muddy glacier water, precipitous, slippery, and slipping slopes of slates, schists, and granites, offering here and there, in a sheltered nook, a precarious foot-hold for a few miserable birches; a dreary country in which the continual din of the mountain torrents and the desolate slopes become absolutely depressing. Such is most of Lahoul, and it is only near the junction of the two main rivers, the Chandra and the Bagha, at an elevation a little below 10,000 feet, that one finds patches of cultivable land and room for a few small villages.

A single short march from the bed of the Chandra over the Rotang pass, and one enters quite a different scene, with a sense of relief only to be appreciated by one who has had a long spell of lonely camp life in Lahoul. In Kulu the higher slopes are clothed with forests of stately deodars, pines, and cedars, relieved by walnut, plane, and evergreen oak, whilst at lower levels fruit trees and flowering shrubs break the regularity of the cultivated terraces, and surround the clusters of picturesque homesteads, which in style of architecture remind one of a Swiss valley. The people honestly reflect the natural fertility of the valley: they form the most prosperous and apparently the happiest community of peasants I have met anywhere in India.

The people who in Lahoul live on the small amount of cultivable land available are, one would expect from the nature of the country and its severe climate, more likely to belong to the hardy Mongoloid tribes of the interior, than to be immigrants from such a luxurious valley as Kulu. Yet the land system, occupation and now the religion get their taint from Kulu, and the people of the zemindar class are pleased to identify themselves with the neighbouring Kanets, whose exclusiveness is not sufficiently rigid to resent this form of flattery. If you ask the Lahouli ryot what his caste is, he invariably answers, "zemindar," and on cross-examination explains that he is practically the same as the Kulu zemindar in occupation, habits, and, finally, caste. It is here that one may say that in the divisions of caste, function plays a more prominent part than the racial idea. It is through similarity of occupation that their weak claim to the caste position occupied by the zemindars of Kulu is permitted, and, finally, by migration and intermarriage, made real. Some of the Lahouli Kanets are not separated by many generations from people who were orthodox Buddhist Mongolians, but who have adopted the attenuated form of Hinduism which reaches Lahoul.

It is interesting to find that the claims based on similarity of occupation are

able to eclipse the pride of blood which so rigidly characterizes the high-caste Hindu where, in the Peninsula of India, he comes into direct contact with the less comely Kolarian. The differences of opinion which have been expressed on this question as to the nature of caste origin are probably more apparent than real, and the outcome of studying the problem from opposite phases of the same truth. By those who have studied the people in areas where the caste divisions are expressed by differences of occupation rather than physical features, community of function has been considered to be at the root of the caste system. In other areas, where the Hindus live side by side with the unmodified aborigines, as for instance in Behar and Chota Nagpur, distinctions of race appear to be maintained and accentuated amongst the castes. Both ideas may be locally true and both consistent with Mr. Risley's unassailable conclusion, that on the average the grades of caste correspond to ethnic differences, which only in degree mark off the high-caste Hindu from the black Kolarian. In the home of the Kanets the answer, "I am a zemindar" comes more promptly than "I am a Kanet"; in other words, occupation is the leading character of distinction, not descent. This fact comes out not only when one studies the relations of the Kanets as a whole to the Mongolian families of Lahoul, it shows itself also in their subdivisions. In any group of Kanets the *Raos*, on invitation, will separate themselves from the *Khasiās*, and, notwithstanding the claim of the latter to a superior Rajput descent, they will intermarry and eat together, whilst measurements, as might be expected, fail to show an average difference between the two subdivisions. That there was once a real distinction seems highly probable, but it now no longer persists except in the family names and traditions. In Spiti, I understand, the caste distinctions are even less carefully defined than in Kulu and Lahoul, and the so-called Kanets are said to be almost pure Tibetans.

Language has had something to do with the partial failure to keep the castes distinct, or, in other words, the languages show a composite character as the people do in blood. Pahāri, which is built up on a basework of Hindi and Urdū in Kulu, becomes distinctly tinged with Tibetan words in the upper part of the valley, and becomes a merely modified Tibetan in Lahoul. The names of the subjects measured show this: most of those measured in Lahoul gave Tibetan names. There are, however, quite distinct compound-dialects in the different villages of Lahoul, and if one made a more detailed ethnographic survey than was possible during my stay in the country, one would probably find a corresponding local variation in ethnic characters.

III.—ANTHROPOMETRY.

A very reliable average for a well-defined caste can be obtained by measuring twenty-five subjects taken at random; but a larger number is desirable for purposes of analysis, especially in the case of castes into which strange blood has recently been imported. It was my intention to measure at least sixty of each caste, and though this was done in Kulu, there was no opportunity in Lahoul of getting more

than thirty subjects. I give, however, the individual measurements of all the subjects measured in the hope that the work may some day be continued, when a more complete examination can be made of the interesting results of this Indo-Tibetan cross. To attack the problem from a quantitative point of view would necessitate a survey on the Tibetan side of the frontier also. At present we have precise data of only one constituent of the cross, but we assume that the

TABLE I.
Individual Measurements of Lahoul Kanets.

No.	Name.	Age.	Stature.	Span of arms.	Span $\times 100$ Stature	Height sitting.	Height Sitting $\times 100$ Stature.	Height Kneeling.	Stature minus height kneeling.	Leg $\times 100$ Stature	Cubit.	Cubit $\times 100$ Stature	Left foot length.	Foot $\times 100$ Stature
1	Sarju	38	166	164	99	87	52.4	120	46	27.7	45.2	27.2	23.7	14.3
2	Bija Rám	28	171	174	102	88	51.5	126	45	26.3	46.9	27.4	24.6	14.4
3	Dárja	31	162	161	99	86	53.1	122	40	24.7	44.7	27.6	24.2	14.9
4	Tágú	28	164	174	106	88	53.7	123	41	25.0	46.3	28.2	24.6	15.0
5	Santú	24	158	165	104	81	55.7	119	39	24.7	43.4	27.5	23.7	15.0
6	Kúnga	32	163	164	101	86	52.8	124	39	23.9	43.3	26.6	23.4	14.4
7	Fáti	34	145	144	99	79	54.5	109	36	24.8	39.6	27.3	22.7	15.7
8	Túk-túk	40	161	166	103	81	50.3	116	45	27.9	45.6	28.3	25.1	15.6
9	Panna	26	165	162	98	91	55.2	124	41	24.8	43.6	26.4	24.8	15.0
10	Zangho	21	162	166	103	83	51.2	121	41	25.3	44.2	27.3	24.1	14.9
11	Anú	29	164	170	104	86	52.4	119	45	27.4	47.4	28.9	24.1	14.7
12	Kyatúk	30	172	182	106	90	52.3	125	47	27.3	48.2	28.0	24.7	14.4
13	Palzú	24	163	166	102	87	53.4	122	41	25.2	45.0	27.6	25.4	15.6
14	Tsuzan	38	164	169	103	83	50.8	119	45	27.4	45.4	27.7	24.3	14.8
15	Súkh Rám	50	164	165	101	87	53.0	124	40	24.4	42.9	26.2	24.1	14.7
16	Labrang	27	160	164	102	84	52.5	119	41	25.6	44.3	27.7	23.9	14.9
17	Sunamrigzin	34	170	170	100	93	54.7	128	42	24.7	46.6	27.4	24.3	14.3
18	Padmatashi	25	148	163	110	79	53.4	111	37	25.0	42.4	26.6	22.7	15.3
19	Dandú	50	159	158	99	87	54.7	116	43	27.0	42.7	26.9	23.8	14.9
20	Kyatúk	33	161	168	104	85	52.8	120	41	25.5	44.9	27.9	24.6	15.3
21	Sanso	41	153	158	103	81	52.9	111	42	27.5	42.3	27.6	22.6	14.8
22	Gangnand	35	159	163	102	87	54.7	120	39	24.5	43.5	27.4	23.1	14.5
23	Kútosing	40	155	161	104	83	53.5	116	39	25.2	42.9	27.7	23.7	15.3
24	Gáru	37	168	174	104	88	52.4	125	43	25.6	46.8	27.7	25.7	15.3
25	Súnamsaring	45	160	167	104	84	52.5	117	43	26.9	46.2	28.9	23.6	14.8
26	Nangial	43	159	159	100	87	54.7	121	38	23.9	43.9	27.6	24.1	15.2
27	Súnamsangho	50	165	173	105	87	52.7	120	45	27.3	46.8	28.4	24.4	14.8
28	Babgia	31	159	164	103	86	54.1	118	41	25.8	45.3	27.2	23.9	15.0
29	Tundop	30	160	163	102	89	55.8	122	38	23.7	42.5	26.6	24.1	15.1
30	Gopal	25	175	179	102	92	52.6	130	45	25.7	48.9	28.0	25.1	14.3

Tibetans are in general more brachycephalic, more platyopic, more leptorhine and shorter than the Kanets of Kulu. In all these four points the average Kanet of Lahoul differs from the average of Kulu; but neither approaches the typical Mongoloid, and it is consequently by no means certain that the Lahouli Kanet is, as he is often asserted to be on account of his language and religion, more Tibetan than Indian. So far as one is justified in drawing a conclusion from these results, Indian blood now predominates in Lahoul though it is quite distinctly diluted.

TABLE II.
Individual Measurements of Lahoul Kanets—(continued).

No.	Name.	Cephalic.			Nasal.			Bi-malar breadth.	Naso-malar.		Facial angle.
		Length.	Breadth.	Index.	Length.	Breadth.	Index.		Breadth.	Index.	
1	Sarju	18.8	14.7	78.2	5.4	3.8	70.4	10.1	11.7	116	67
2	Bija Rám	18.9	14.5	76.7	5.0	3.7	74.0	10.0	11.4	114	65
3	Dúrja	18.5	14.6	78.9	5.4	3.7	68.5	10.2	11.4	112	65
4	Tógú	19.0	14.8	77.9	5.2	3.5	67.3	10.7	11.7	109	62
5	Santú	19.2	14.7	76.6	5.2	3.5	67.3	10.1	11.3	112	69
6	Kúnga....	19.2	15.1	78.6	5.8	3.3	66.9	9.6	11.1	115	67
7	Fáti	19.1	14.8	77.5	4.8	3.4	70.8	9.7	10.5	108	65
8	Túk-túk	17.9	14.7	82.1	5.7	3.7	64.9	10.6	11.1	105	67
9	Panna	19.9	14.3	71.9	5.5	3.8	69.1	9.7	11.0	113	64
10	Zangbo	19.1	14.5	75.9	5.6	3.2	67.1	9.8	10.9	111	66
11	Anú	19.6	14.9	76.0	5.9	3.6	61.0	9.6	10.5	109	67
12	Kyatúk	18.6	14.5	78.0	5.7	3.4	59.7	10.3	11.2	109	67
13	Palzú	18.6	14.9	80.1	5.1	3.6	70.6	9.9	11.2	112	64
14	Tauzan	18.4	14.2	77.2	5.6	3.9	69.6	9.5	10.7	113	62
15	Súkh Rám	18.1	14.6	80.7	5.4	3.9	72.2	9.4	10.1	107	67
16	Labrang	19.1	14.8	77.5	5.3	3.2	60.4	9.9	11.2	113	67
17	Sunamrigzin	19.5	14.7	75.4	5.7	3.3	57.9	10.4	11.2	108	65
18	Padmatashi	18.1	14.1	77.9	4.9	3.4	69.4	10.2	11.4	112	67
19	Dandú....	19.1	14.6	76.5	5.6	3.8	67.9	9.7	11.0	113	62
20	Kyatúk	19.4	15.4	79.4	5.7	3.6	63.2	10.3	11.8	115	68
21	Sanso	18.5	14.8	80.0	5.2	3.7	71.2	9.7	11.6	120	66
22	Gangnand	18.6	14.1	75.8	4.7	3.4	72.3	9.9	10.4	105	67
23	Kútosaring	18.9	15.5	82.0	5.5	3.3	60.0	9.8	11.2	114	64
24	Gúrú	19.7	15.4	78.2	5.1	3.6	70.6	10.8	12.8	118	74
25	Súnamaring	19.1	14.6	76.5	5.9	3.5	59.3	9.6	11.0	115	62
26	Namgial	19.2	14.9	77.6	5.2	3.3	63.5	9.7	10.6	109	72
27	Súnamzangbo....	18.8	13.8	73.4	4.3	3.7	75.5	9.3	11.4	123	65
28	Babgia	19.2	14.4	75.0	5.2	3.3	63.5	9.2	10.8	117	69
29	Tundop	19.4	14.5	74.7	4.9	3.7	75.5	9.7	11.4	117	66
30	Gopál	18.8	14.7	78.2	5.2	3.3	63.5	10.3	12.6	122	72

TABLE III.
Individual Measurements of Kulu Kanets.

No.	Name.	Age.	Stature.	Span of arms.	Span $\times 100$ Stature.	Height sitting.	Height sitting $\times 100$ Stature.	Height kneeling.	Stature minus height kneeling.	Leg $\times 100$ Stature.	Cubit.	Cubit $\times 100$ Stature.	Left foot length.	Foot $\times 100$ Stature.
1	Primú	25	162	162	100	82	50.6	121	41	25.3	44.8	27.7	24.4	15.1
2	Sangtú	23	169	168	99	85	50.3	127	42	24.9	45.7	27.0	25.7	15.2
3	Maitú	43	165	165	100	85	51.5	122	43	26.1	44.4	26.9	25.2	15.3
4	Dbálú	22	172	172	100	90	52.3	129	43	25.0	45.6	26.6	25.5	14.8
5	Parm	40	162	167	103	86	53.1	121	41	25.3	44.6	27.5	23.3	14.4
6	Rám Dás	32	163	162	99	85	52.1	119	44	27.0	44.3	27.2	24.3	14.9
7	Ráp Dás	31	171	171	100	91	53.2	127	44	25.7	45.4	26.5	25.3	14.8
8	Harú	49	163	170	104	84	51.5	121	42	25.8	44.3	27.2	24.8	15.2
9	Tekú	25	160	169	106	83	51.9	119	41	25.6	44.8	28.0	23.5	14.7
10	Kálú	46	163	161	99	86	52.8	120	43	26.5	43.2	26.5	25.2	15.5
11	Rallú	21	168	175	104	88	52.4	125	43	25.6	46.5	27.7	25.4	15.2
12	Dianú	42	165	174	106	84	51.0	124	41	24.8	45.0	27.3	25.2	15.3
13	Repta Rám	44	173	173	100	91	52.6	128	45	26.0	45.8	27.1	27.2	15.7
14	Nuthú	26	166	162	98	91	54.8	125	41	24.7	41.9	25.2	23.2	14.0
15	Raddi	20	166	171	103	83	50.0	120	46	27.7	44.9	27.0	24.7	14.9
16	Brim Dás	38	165	170	103	86	52.1	123	42	25.5	46.6	28.2	26.0	15.8
17	Sisú	36	159	164	103	84	52.8	118	41	25.8	43.3	27.2	25.2	15.8
18	Utmú	36	163	167	103	86	52.8	122	41	25.2	44.0	27.5	24.7	15.2
19	Gutamú	25	161	168	104	85	52.8	120	41	25.5	44.6	27.7	25.5	15.8
20	Khaltú	31	170	167	98	89	52.4	126	44	25.9	45.3	26.6	24.8	14.6
21	Uddú	32	169	171	101	90	53.3	126	43	25.4	44.6	26.4	24.2	14.3
22	Parsú	40	169	173	102	91	53.8	127	42	24.9	46.3	27.4	24.6	14.7
23	Dovi Rám	23	163	162	99	87	53.4	121	42	25.8	44.0	27.0	25.3	15.5
24	Matthi	44	169	179	106	89	52.6	125	44	26.0	47.8	28.3	26.3	15.6
25	Sittú	42	170	178	105	86	50.6	127	43	25.3	47.8	28.1	26.2	15.4
26	Nandú	30	160	166	104	83	55.0	121	39	24.4	44.9	28.1	24.3	15.2
27	Bika Rám	24	167	172	103	88	52.7	123	44	26.3	45.1	27.0	24.7	14.8
28	Badhr	29	162	164	101	87	53.7	120	42	25.9	44.3	27.3	25.1	15.5

No.	Name.	Age.	Stature.	Span of arms.	Span \times 100 Stature.	Height sitting.	Height sitting \times 100 Stature.	Height kneeling.	Stature minus height kneeling.	Leg \times 100 Stature.	Cubit.	Cubit \times 100 Stature.	Left foot length.	Foot \times 100 Stature.
29	Rám Dian	31	168	170	102	86	51.8	123	43	25.9	45.5	27.4	24.4	14.7
30	Soárá	36	164	168	102	90	54.9	121	43	26.2	43.8	26.7	24.4	14.9
31	Túlú	30	166	166	100	89	53.6	124	42	25.3	44.9	27.0	24.6	14.8
32	Sangtá	35	167	172	103	86	51.5	124	43	25.7	46.1	27.6	24.7	14.8
33	Badi Rám	25	167	174	104	89	53.3	126	41	24.6	47.5	28.4	24.3	14.6
34	Shám Dás	22	166	167	101	88	53.0	123	43	25.9	44.9	27.0	24.9	15.0
35	Gupta Rám	38	176	182	103	91	51.7	131	45	25.6	49.2	28.0	25.0	14.2
36	Káli Rám	36	157	162	103	85	54.1	117	40	25.5	43.7	27.8	24.2	15.4
37	Rushú	37	169	175	104	88	52.1	126	43	25.4	46.0	27.2	24.4	14.4
38	Rashnú	40	163	166	102	84	51.5	121	42	25.8	43.7	26.8	24.1	14.6
39	Nesá	25	161	167	104	80	49.7	119	42	26.1	45.4	28.2	25.2	15.7
40	Nankú	26	163	172	106	86	52.8	124	39	23.9	45.0	27.6	23.6	14.5
41	Nathlú	30	159	163	102	87	54.7	119	40	25.2	42.8	26.9	24.9	15.6
42	Nátú	34	165	177	107	86	52.1	124	41	24.8	47.1	28.5	26.2	15.9
43	Nokú	27	169	171	101	84	49.7	126	43	25.4	45.7	27.0	25.1	14.9
44	Bikan Dás	37	166	169	102	86	51.8	124	42	25.3	45.2	27.2	25.3	15.2
45	Dháú	47	156	158	101	80	51.3	116	40	25.6	42.5	27.2	24.4	15.6
46	Túlú	24	160	165	103	87	54.4	119	41	25.6	43.2	27.0	23.7	14.8
47	Damodar	24	165	175	106	85	51.5	122	43	26.1	45.7	27.7	24.8	15.0
48	Ganga Rám	32	163	175	107	86	52.8	122	41	25.2	46.4	28.5	25.1	15.4
49	Ablú	50	171	174	102	89	52.0	124	47	27.5	49.3	28.8	26.1	15.3
50	Ratni	33	162	170	105	82	50.6	118	44	27.2	46.1	28.5	25.1	15.6
51	Dadrú	38	164	174	106	87	53.0	124	40	24.4	44.7	27.3	24.7	15.1
52	Matthi	42	172	172	100	91	52.9	123	49	28.5	45.1	26.2	25.9	15.1
53	Dúlú Rám	27	160	166	104	83	51.9	119	41	25.6	43.4	27.1	24.1	15.1
54	Túlú	35	168	167	99	87	51.7	122	46	27.4	45.6	27.1	24.5	14.6
55	Sítha Rám	41	173	180	104	93	53.8	118	50	28.9	47.7	27.6	26.6	15.4
56	Mullá	43	170	186	109	82	48.2	123	47	27.6	50.3	29.6	27.4	16.1
57	Maghú	36	160	163	102	84	52.5	122	38	23.7	42.1	26.3	22.9	14.3
58	Nandú	39	172	176	102	93	54.1	128	44	25.6	46.2	26.9	26.2	15.2
59	Champi	29	164	161	98	86	52.4	121	43	26.2	44.1	26.9	25.5	15.5
60	Sárá	28	166	164	99	85	51.2	121	45	27.1	45.6	27.5	24.6	14.8

TABLE IV.
Individual Measurements of Kulu Kanets—(continued.)

No.	Name.	Cephalic.			Nasal.			Bi-malar breadth.	Naso-malar.		Facial angle.
		Length.	Breadth.	Index.	Length.	Breadth.	Index.		Breadth.	Index.	
1	Primú	19.0	14.6	76.8	4.8	3.7	77.1	11.1	13.0	117	70
2	Sangtú	18.7	13.6	72.7	5.1	3.4	66.7	10.4	11.2	108	72
3	Maitú	20.3	14.6	71.9	5.9	3.3	55.9	10.4	12.0	115	70
4	Dhálú	19.2	14.2	74.0	5.4	3.8	70.4	11.3	12.9	114	68
5	Parm	19.5	15.0	78.9	4.8	3.9	81.3	10.5	12.6	120	68
6	Rám Dás	19.8	14.2	71.7	5.2	4.4	84.6	10.8	12.7	117	69
7	Ráp Dás	18.9	14.8	78.3	5.2	3.8	73.1	9.9	11.3	114	68
8	Harú	19.8	14.1	71.2	4.8	4.1	85.4	9.9	11.8	119	73
9	Tekú	18.8	14.6	77.7	4.8	3.7	77.1	9.9	12.1	122	76
10	Kálú	19.4	15.4	79.4	4.5	4.3	95.5	10.6	12.0	113	74
11	Rallú	18.3	13.6	74.3	5.3	3.7	69.8	9.9	10.8	109	65
12	Dianú	19.2	14.2	74.0	4.8	3.8	79.2	9.7	12.4	128	72
13	Repta Rám	20.4	14.6	71.6	5.5	3.7	67.3	8.8	11.4	129	73
14	Nuthú	18.5	13.8	74.6	5.1	3.5	68.6	9.8	11.2	114	73
15	Raddi	19.5	14.3	73.3	5.1	3.5	68.6	10.7	12.8	119	71
16	Brim Dás	19.8	14.2	71.7	5.3	3.8	71.7	10.8	11.8	109	71
17	Siasú	18.9	13.7	72.5	5.1	3.4	66.7	10.6	11.8	111	74
18	Utmú	19.2	13.5	70.3	5.3	3.0	56.6	9.7	11.6	120	65
19	Gutamú	18.6	13.6	73.1	5.0	3.9	78.0	9.7	11.6	120	67
20	Khaltú	19.9	15.2	78.4	5.4	4.1	75.9	10.3	12.2	118	70
21	Uddú	18.7	14.3	76.5	4.9	3.8	77.6	9.4	10.8	115	72
22	Parsú	18.9	14.4	76.2	5.6	3.9	69.6	9.9	11.2	113	68
23	Devi Rám	19.4	14.3	73.7	4.5	3.4	75.6	9.7	11.6	122	68
24	Matthi	19.3	13.8	71.5	5.3	3.5	67.9	9.9	11.8	119	67
25	Sittú	19.7	14.5	73.6	5.2	3.6	69.2	10.1	11.4	113	69
26	Nandú	19.3	14.5	75.1	4.9	3.7	75.5	9.3	10.5	116	67
27	Biika Rám	19.2	14.5	75.5	5.3	4.1	77.4	10.6	11.4	108	66
28	Badhr	19.4	14.4	74.2	4.7	3.8	80.9	10.2	11.8	116	70
29	Rám Dian	19.9	14.5	72.9	5.1	3.9	76.5	10.1	11.4	113	71

No.	Name.	Cephalic.			Nasal.			Bi-malar breadth.	Naso-malar.		Facial angle.
		Length.	Breadth.	Index.	Length.	Breadth.	Index.		Breadth.	Index.	
30	Soárá	18.9	14.3	75.7	5.1	3.9	76.5	9.6	11.6	121	69
31	Túlú	19.4	13.8	71.1	4.9	3.9	79.6	10.0	11.6	116	66
32	Sangtá	19.9	14.3	71.9	5.1	3.6	70.8	10.3	11.8	115	69
33	Badi Rám	19.1	14.2	74.3	5.1	3.5	68.6	9.6	10.8	113	70
34	Shám Dás	18.5	14.0	75.7	5.1	4.2	82.4	10.2	12.2	120	75
35	Gupta Rám	19.8	14.5	73.2	5.5	3.9	70.9	10.5	11.8	112	72
36	Káli Rám	18.5	14.4	77.8	4.8	3.3	68.8	10.4	11.4	110	67
37	Rushú	18.5	13.8	74.6	5.4	4.1	75.9	10.2	11.3	111	65
38	Rashnú	19.5	15.0	76.9	5.3	4.0	75.5	11.1	12.4	112	66
39	Nesú	20.2	14.3	70.8	4.5	3.3	73.3	10.0	12.0	120	65
40	Nanku	19.3	13.2	68.4	4.6	3.4	73.9	10.1	11.7	118	68
41	Nathlú	19.1	14.2	74.3	4.6	3.5	76.1	9.4	10.6	113	71
42	Nátú	19.3	13.6	70.5	4.9	3.7	75.5	10.4	12.4	119	68
43	Nokú	19.2	14.6	76.0	5.0	3.9	78.0	9.9	12.2	123	68
44	Bikun Dás	20.4	14.6	71.6	5.7	4.1	71.9	10.1	11.2	111	67
45	Dhálú	19.2	13.7	71.4	5.4	3.9	72.2	9.7	10.6	109	69
46	Túlú	19.1	13.9	72.8	4.6	3.6	78.3	10.1	10.8	107	67
47	Damodar	19.9	13.8	69.3	4.8	3.7	77.1	9.9	11.4	115	66
48	Ganga Rám	19.3	14.2	73.6	4.5	3.7	82.2	10.2	11.6	114	70
49	Ablú	19.1	14.2	74.3	5.2	3.9	75.0	10.1	11.8	117	68
50	Ratni	19.1	14.5	75.9	5.2	3.2	61.5	9.9	11.2	113	68
51	Dadrú	19.3	14.5	75.1	5.3	4.0	75.5				
52	Matthi	19.7	14.3	72.6	5.6	3.7	66.1				
53	Dúlú Rám	18.2	14.6	80.2	5.0	3.9	78.0				
54	Túlú	18.5	14.5	78.4	4.9	3.6	73.5				
55	Sítha Rám	18.4	13.9	75.5	4.8	3.8	79.2				
56	Mullá	18.6	13.7	73.7	5.3	3.5	69.0				
57	Maghú	18.8	13.8	73.4	5.2	3.5	67.3				
58	Nandú	20.2	14.6	72.2	5.0	3.9	78.0				
59	C.ampi	18.9	14.6	77.2	4.9	3.8	77.6				
60	Súrú	18.8	14.8	78.7	4.9	3.7	75.5				

TABLE V.
Summary of Measurements.

	Kulu.			Lahoul.		
	Max.	Average.	Min.	Max.	Average.	Min.
	cm.	cm.	cm.	cm.	cm.	cm.
Stature	176	163.4	156	175	161.8	145
Span of arms	186	169.5	158	179	165.9	144
Span relative to stature (100)	100.4	102.5	97.6	110.1	102.5	98.2
Height, sitting	93	86.6	80	93	86.1	79
Height sitting relative to stature (100)	55.0	52.3	48.2	55.7	53.2	50.3
Height, kneeling	131	122.9	116	130	120.3	109
Stature minus height kneeling = leg	50	42.5	38	47	41.6	36
Leg relative to stature (100)	28.9	25.8	23.7	27.0	25.7	23.7
Left fore-arm (cubit)	50.3	45.3	41.9	48.9	44.7	39.6
Cubit relative to stature (100)	29.6	27.3	25.2	28.9	27.6	26.2
Cephalic length (max. glabella-occipital) ...	20.4	19.2	18.1	19.9	18.9	17.9
" breadth (maximum)	15.4	14.3	13.2	15.5	14.7	13.8
" index	81.2	74.3	68.4	82.1	77.5	71.9
Nasal length	5.9	5.06	4.5	5.9	5.3	4.7
" breadth	4.4	3.74	3.0	3.9	3.5	3.2
" index	95.5	74.1	55.9	75.5	66.4	56.9
Naso-malar, breadth	13.0	11.7	10.6	12.8	11.2	10.1
Bi-malar, breadth	11.3	10.1	8.8	10.8	9.9	9.2
Naso-malar index	129	115.5	107	123	112.9	105
Left foot, length	27.4	24.9	22.9	25.7	24.1	22.6
Foot length relative to stature (100)	16.1	15.1	14.0	15.7	14.9	14.3
Facial angle	76°	69.4°	65°	74°	66.3°	62°

Both constituents of the Lahouli cross are, compared with the majority of Indian tribes, distinctly leptorhine. The lowest nasal indices recorded by Mr. Risley in his *Tribes and Castes* are of the Gujars of the Punjab and the Mongoloid Lepchas of the Darjeeling Hills. The effect of this cross would therefore tend to improve the nose by dilution of the "black" blood which forms a constituent of the ordinary Kanet; this the measurements show to be the case. In the head measurements, however, the constituent elements are derived

from opposite types, the Punjabi people being essentially dolichocephalic, whilst the Tibetans are presumably brachycephalic. Judging by the Tibetans of the Darjeeling area, where the cephalic index is always over 78·5 and averages 80·7 (Risley), the Tibetan blood in Lahoul must be subordinate to the Punjabi (Indian), the infusion being sufficient only to raise the average from 74·3 of the typical Kanet to 77·5 in the Lahouli. The average naso-malar index points to the same conclusion; Risley's average for the Mongoloid Darjeeling tribes is as low as 108·6, whilst for the Punjabi castes it is 116·0. The Kulu Kanets, with an average of 115·5, thus approach the Punjab average, whilst in Lahoul the average is lowered to 112·9. Risley gives 168·4 cm. as the average stature of the Punjab tribes, the Khatris and Aroras most nearly approaching the Kanets with 166·2 and 165·8 respectively. The Mongoloids of Darjeeling average 161·2, only just below that of the Lahoul Kanets. But this does not necessarily show a preponderance of Tibetan blood in Lahoul, as the "black" blood in the Kanets also tends to low stature, and its effect would supplement that of the Tibetan infusion. The other characters measured are of doubtful ethnological significance, though with further data they may prove to be of value for comparative purposes. The only point of possible value is the facial angle, in which there is insufficient variation in India to permit of its use as a prominent characteristic for classification. As far as the data go, however, the figures obtained in Kulu and Lahoul fall into line with what one would expect from previously recorded data. Thus, assuming again that Risley's Darjeeling tribes represent average Mongoloids, we find there is, compared with the high castes of India, a slight tendency to prognathism. The average for the Darjeeling area is 65·2; that for the Punjab 69·2. In the case of the Kanets the Kulu people, with 69·4, conform to the Punjab average, whilst the Lahoulis, with 66·3, are nearer the Mongoloid type, as they should be according to their assumed ancestry.

Although there is no doubt that the evidence of these six characteristics—cephalic, naso-malar and nasal indices, stature and facial angle—uniformly points to the presence of a large proportion of Tibetan blood in the Lahoul Kanets, we are unable to form a precise idea of the quantitative relations of the Indian to the Tibetan strain. Some day we shall probably obtain a coefficient for correlating the degree of alteration in such physical criteria with the proportion of blood mixture in a tribe of known origin.

IV.—DISCRIMINATION OF UNALTERED CONSTITUENTS FROM THE RESULTS OF ATAVISM.

A. Analysis of Lahoulis with brachycephalic tendencies.

Analysis of my measurements of the Coorgs and Yeruvus pointed to the conclusion that atavistic tendencies on the part of individuals when shown in one particular physical feature were not maintained uniformly in all characters. The Coorgs, like all the higher castes of India, have absorbed a certain amount of "black" blood as a result of long intercourse with the Kolarian (Dravidian) races,

but a Coorg who shows such Kolarian taint in say a high nasal index seldom or never exhibits other aboriginal traits more than the average of his tribe.¹ I have applied the same system of analysis to my measurements of the Kanets in the Kulu-Lahoul "contact zone," and though it is desirable to have many more data than I possess for a satisfactory discussion of this subject, the results obtained are not without interest.

In the case of the Lahoulis, for instance, the application of this test shows that the population now contains very little of the unaltered Tibetan element, whilst there are apparently some individuals who uniformly tend toward the Indian type. So far as the history of the area goes this is the result which might be expected. The Kanets of Lahoul include a certain number of immigrant families from the Kulu side, and they have not been long enough in the country to have their blood tainted by intermarriage with those who have Tibetan blood. On the other hand, there are probably few Kanets in Lahoul who are the simple result of conversion from Tibetan families; the Tibetan blood in this caste must have been introduced gradually by intermarriage, and now shows itself diluting the Indian blood, affecting the average, but not appearing "neat" in many individuals. Had the Lahoul Kanets consisted of a simple mechanical mixture of Tibetan families with Indian families, one should be able to pick out a large proportion of distinctly Tibetan individuals from amongst those measured, and distinguish them from the purely Indian types. But as the result of actual fusion the individuals who show a Tibetan tendency in head measurements, show a leaning towards the Indian type in other characters.

In Table VI, we have the measurements of fifteen Lahouli Kanets who, by their head measurements, show a tendency to brachycephalism. Accepting this as a leading character to distinguish the Tibetan from the Indian type, we should expect, if these individuals were without Indian blood, that their naso-malar indices would be lower, and that they would be more leptorhine and shorter than the average. As a matter of fact, their naso-malar indices (column A) are slightly higher, their nasal indices slightly lower and their stature a little greater than the average. The differences are, however, very small and almost certainly accidental. The inference is that these fifteen individuals, who are more brachycephalic than the average, are on the whole quite normal in other respects. If we go a step further, and pick out from these fifteen individuals those who show a further Tibetan trait by possessing a lower naso-malar index than the average, we obtain seven subjects, who, in the other distinctive characters, namely, nasal index, stature and facial angle (columns C, F and G), actually show a slight tendency to the Indian side of the average, being slightly more platyrhine, slightly taller and slightly more orthognathous. Still the differences are slight and almost certainly accidental. By going still a step further in the process of elimination, and selecting those who combine, with a tendency to brachycephalism and platyopy, a narrower nose than their fellows, we find that the three individuals who exhibit

¹ See *Journ. Asiatic Soc., Bengal*, lxx (iii), 1901, 90.

such a combination of Tibetan traits, instead of being shorter than the average, are distinctly taller (column E), and instead of being more prognathous are more orthognathous (column H). There are, therefore, certainly less than three individuals out of thirty who are uniformly Tibetan in character; but one of these (No. 8) is markedly so, being not only the most brachycephalic of the lot measured, but also the most platypic, and at the same time leptorhine and slightly shorter than the average. But even No. 8 is slightly more orthognathous than he should be if purely Tibetan. Another (No. 26) also shows a uniform tendency towards the Tibetan side of the average in all points except facial angle, in which respect he is distinctly orthognathous. It cannot be said with certainty, therefore, that there is a single Lahoul Kanet who is purely Tibetan in his bodily measurements.

TABLE VI.

Measurements of Lahoul Kanets who are more brachycephalic, platypic and leptorhine than the average.

No.	Name.	A	B	C	D	E	F	G	H
1	Sarju	116	70.4	—	166	—	—	—	—
3	Dúrja....	112	68.5	68.5	162	—	162	65	—
4	Tágú	109	67.3	67.3	164	—	164	62	—
6	Kúnga	115	56.9	—	163	—	—	—	—
8	Túk-túk	105	64.9	64.9	161	161	161	67	67
12	Kyatúk	109	59.7	59.7	172	172	172	67	67
13	Palzá	113	70.6	—	163	—	—	—	—
15	Súkh Rám	107	72.2	72.2	164	—	164	67	—
18	Padmatashi	112	69.4	69.4	148	—	148	67	—
20	Kyatúk	115	63.2	—	161	—	—	—	—
21	Sanso....	120	71.2	—	153	—	—	—	—
23	Kútosaring	114	60.0	—	155	—	—	—	—
24	Gúrú	118	70.6	—	168	—	—	—	—
26	Namgial	109	63.5	63.5	159	159	159	72	72
30	Gopal....	122	63.5	—	175	—	—	—	—
Average	.....	113.0	66.1	66.5	162.2	164.0	162.9	66.7	66.3
Average for the whole tribe.	.....	112.9	66.4	66.4	161.8	161.8	161.8	66.3	66.3

A. Naso-malar indices of Lahoul Kanets who are more brachycephalic than the average of their compatriots.

B. Nasal indices of A.

C. Nasal indices of those who are more brachycephalic and at the same time have a lower naso-malar index (more platypic) than the average.

D. Statures of A.

E. Statures of the three Lahoul Kanets who are more brachycephalic more platyopic and more leptorhine than the average.

F. Statures of C.

G. Facial angles of C and F.

H. Facial angles of E.

B. Analysis of Lahoulis with dolichocephalic tendencies.

Turning now to the other half of the subjects (Table VII), who, by their head measurements, show a leaning to the Indian type, we find that the thirteen who are more dolichocephalic than the average are also more pro-opic, more platyrhine and taller than the average (columns A, B, D). There is thus an uniform tendency towards the Indian type in all these characters, but the tendency is controlled by a certain amount of Tibetan blood amongst these thirteen. Eliminating a certain amount of this Tibetan strain by removing those who have lower naso-malar indices than the average, we get a residue who have a distinctly more platyrhine nose (column C) and are slightly taller (column F), but these are nevertheless more prognathous than the people of the Punjab, and more like, in this respect, what the Tibetans probably are (column G). Adopting the final step in analysis by removing those who are leptorhine, we have six individuals left who are quite distinctly taller than the average of their tribe (column E); still these are more prognathous (column H). Amongst these, four show pronounced Indian characteristics, and indicate with a fair degree of certainty that there is a considerable proportion of Kanet blood in Lahoul not appreciably diluted with the Tibetan. Apart from the weakness due to the limited number of data (and which it is well to repeatedly remark), there is another source of possible error in this system, due to the fact that amongst pure Tibetans there must be many instances of dolichocephaly possibly combined in the same individuals with pro-opy; but I doubt if such characteristics are ever combined with the other two characters, namely, a tendency to be platyrhine and tall, such as one finds in the Hindu races of the outer Himalayas of the Punjab. Even if all four of these characters were found in pure Tibetans, one ought to be able to rely on the law of chance to exclude such rare specimens from the thirty subjects I selected at random. Even in these, however, the remarkable tendency towards prognathism in all four suggests Tibetan blood. However, the facial angle is a character too hysterical to be safely relied on as a criterion to race, and it must further be remembered that the Kulu Kanets contain a tendency to slight prognathism in their "black" blood. The conclusion which this defence prefaces is this:—Taking the people of Kulu as representatives of the Indian type, the Kanets of Lahoul are a contact-product due mainly to true fusion with their Tibetan neighbours, and are not in any great degree due to the Hinduizing of purely Tibetan families. It is frequently stated, and has become apparently a generally accepted conclusion in gazetteers, that the Lahoul Kanets are *largely* Tibetan in blood. On the whole my results dis-

agree with this conclusion; but they cannot be safely used as a *quantitative* index to the mixture, first, because we have no precise data as to the physical characters of the purely Tibetan tribes immediately beyond the border, and our reasoning is consequently based on analogy with the Tibetans of the Darjeeling area; and secondly, because we are not quite sure of the total absence of Tibetan blood from the Kulu Kanets. Had opportunity occurred I would have measured the Kanets of the Sutlej valley in order to test the second question; but that must be left now until opportunity occurs in the future. The determination of the physical characters of a mixture of known proportions is of the greatest possible importance, but the opportunities for safely gauging the elements of the mixture must be very rare indeed.

TABLE VII.

Measurements of Lahoul Kanets who are more dolichocephalic, pro-opic and platyrrhine than the average.

No.	Name.	A.	B.	C.	D.	E.	F.	G.	H.
2	Bija Rām	114	74·0	74·0	171	171	171	65	65
5	Santú....	112	67·3	—	158	—	—	—	—
9	Panna	113	69·1	69·1	165	165	165	64	64
10	Zangho	111	57·1	—	162	—	—	—	—
11	Anú	109	61·0	—	164	—	—	—	—
14	Tauzan	113	69·6	69·6	164	164	164	62	62
17	Sonamrigzin...	108	57·9	—	170	—	—	—	—
19	Dandú	113	67·9	67·9	159	159	159	62	62
22	Gangnand	105	72·3	—	159	—	—	—	—
25	Súnamsaring	115	59·3	59·3	160	—	160	62	—
27	Súnamzangho	123	75·5	75·5	165	165	165	65	65
28	Rabgia	117	63·5	63·5	159	—	159	69	—
29	Tundop	117	75·5	75·5	160	160	160	66	66
		113·7	66·9	66·3	162·8	164·0	162·9	64·4	64·0
Average for the whole tribe. }		112·9	66·4	66·4	161·8	161·8	161·8	66·3	66·3

A. Naso-malar indices of Lahoul Kanets who are more dolichocephalic than the average.

B. Nasal indices of A.

C. Nasal indices of those who are more dolichocephalic and at the same time more pro-opic than the average.

D. Statures of A and C.

E. Statures of the six Lahoul Kanets who are more dolichocephalic, more pro-opic and more platyrrhine than the average.

F. Statures of C.

G. Facial angles of C and F.

H. Facial angles of E.

C. Analysis of Kulu Kanets who show brachycephalic tendencies.

By similarly analyzing the Kulu measurements we find that there is not a single individual that combines the Tibetan characters sufficiently to conform to the Lahoul average, and that those who, in head measurements, are on the brachycephalic side of the average for their tribe, are in other characters more Indian than the average. Table VIII shows the measurements of twenty-five who are less dolichocephalic than the average of fifty. Columns A, B, and D show that these twenty-five are slightly more pro-opic, more platyrhine and taller than the average, instead of the reverse; and, by adopting the process of elimination, as in the case of the Lahoulis, we obtain eight subjects who, whilst they are less dolichocephalic and at the same time more platyopic and leptorhine than their compatriots, are nevertheless taller.

TABLE VIII.—*Measurements of Kulu Kanets who are more brachycephalic, platyopic and leptorhine than the average.*

No.	Name.	A.	B.	C.	D.	E.
1	Primá	117	77.1	—	162	—
4	Dhálá	114	70.4	70.4	172	172
5	Parm	120	81.3	—	162	—
7	Ráp Dás	114	73.1	73.1	171	171
9	Tekú	122	77.1	—	160	—
10	Kálá	113	95.5	95.5	163	—
11	Rallá	109	69.8	69.8	168	168
12	Dianá	128	79.2	—	165	—
14	Nuthá	114	68.6	68.6	166	166
20	Khaltá	118	75.9	—	170	—
21	Uddá	115	77.6	77.6	169	—
22	Parsá	113	69.6	69.6	169	169
26	Nandá	116	75.5	—	160	—
27	Béka Rám	108	77.4	77.4	167	—
28	Badhr	116	80.9	—	162	—
30	Soárá	121	76.5	—	164	—
33	Badi Rám	113	68.6	68.6	167	167
34	Shám Dás	120	82.4	—	166	—
36	Kúli Rám	110	68.8	68.8	157	157
37	Rushá	111	75.9	75.9	169	—
38	Rashná	112	75.5	75.5	163	—
41	Nathlá	113	76.1	76.1	159	—
43	Noká	123	78.0	—	169	—
49	Ablá	117	75.0	—	171	—
50	Ratni	113	61.5	—	162	162
Average ....	....	115.6	75.5	73.5	166.3	166.5
Average of 50	....	115.5	74.1	74.1	165.1	165.1

- A. Naso-malar indices of the Kulu Kanets who are more brachycephalic than the average of fifty (73·8).
- B. Nasal indices of A.
- C. Nasal indices of those who are more brachycephalic and at the same time have a lower naso-malar index (more platyopic) than the average.
- D. Statures of A and B.
- E. Statures of those who are more brachycephalic, more platyopic and more leptorhine than the average of their compatriots.

D. Analysis of Kulu Kanets with dolichocephalic tendencies.

Examination of the subjects who in all three characteristics—cephalic, nasal and naso-malar indices—range on the Indian side of the average, shows that in stature they are shorter, instead of taller, than the mean (Table IX). Only one subject, No. 31, is distinctly Indian in all four points, and he is not markedly so. There is, therefore, no evidence of mechanical mingling amongst the Kulu Kanets. If they are the result of a mixture of Tibetan with Indian blood, the fusion is now real, and as a caste they have a right to be regarded as having a definite blood value. In this respect they differ from the Lahoul Kanets who are not yet—to use a metallurgical term—thoroughly annealed. Their irregularities will tone down as intermarriage proceeds, and in time, if the caste system is maintained, the Lahoul Kanet blood will be a definite compound of Tibetan and Indian in each individual: there will be no subjects who uniformly show Tibetan or who uniformly show Indian characters.

TABLE IX.

Measurements of Kulu Kanets who are more dolichocephalic, pro-opic and platyrrhine than the average.

No.	Name.	A.	B.	C.	D.	E.
2	Sangtú	108	66·7	—	169	—
3	Maitú	115	55·9	—	165	—
6	Rám Dás	117	84·6	84·6	163	163
8	Harú	119	85·4	85·4	163	163
13	Repta Rám	129	67·3	67·3	173	—
15	Raddi	119	68·6	68·6	166	—
16	Brim Dás	109	71·7	—	165	—
17	Sissá	111	66·7	—	159	—
18	Utmá	120	56·6	56·6	163	—
19	Gutamú	120	78·0	78·0	161	161
23	Devi Rám	122	75·6	75·6	163	163
24	Matthi	119	67·9	67·9	169	—
25	Sittú	113	69·2	—	170	—
29	Rám Dian	113	76·5	—	166	—

TABLE IX—*continued*.

No.	Name.	A.	B.	C.	D.	E.
31	Tulú	116	79·6	79·6	166	166
32	Sangtú	115	70·6	—	167	—
35	Gupta Rám	112	70·9	—	176	—
39	Nesú	120	73·3	73·3	161	—
40	Nankú....	116	73·9	73·9	163	—
42	Nátú	119	75·5	75·5	165	165
44	Bikan Dás	111	71·9	—	166	—
45	Dhálú	109	72·2	—	156	—
46	Tálú	107	78·3	—	160	—
47	Damodar	115	77·1	—	165	—
48	Ganga Rám	114	82·2	—	163	—
Average ....	....	115·5	72·6	73·9	164·9	163·6
Average 750	....	115·5	74·1	74·1	165·1	165·1

A. Naso-malar indices of Kulu Kanets who are more dolichocephalic than the average.

B. Nasal indices of A.

C. Nasal indices of those who are more dolichocephalic and at the same time have a higher naso-malar index (more pro-opic) than the average.

D. Statures of A and B.

E. Statures of those who are more dolichocephalic, more pro-opic and more platyrrhine than the average.

V.—DEGREE OF VARIATION.

The degree of variation within a caste can be expressed roughly by determining the smallest number which gives a stationary average. Thus in the case of the sixty Kulu Kanets, if we determine the average of the odd number subjects, we find they agree to the first place of decimals with the average of the even numbers. By dividing the subjects into three groups of twenty each, taken at random, the averages begin to show divergences approaching an integer in the indices. One assumes, therefore, that thirty subjects taken at random may be trusted to give a close approximation to the true average for this tribe, whilst twenty would fail to do so. But I find, on attempting to obtain a frequency curve, that unless a very large modulus is employed, the curves for groups of thirty amongst the Kulu Kanets are not identical in form, and on testing the figures published by Mr. Risley for the aboriginal tribes of Chota Nagpur, where one would expect less variation than in the evidently composite Kanets, it requires at least fifty subjects with a modulus of five in nasal indices to obtain curves showing an approach to similarity in form. I do not think,

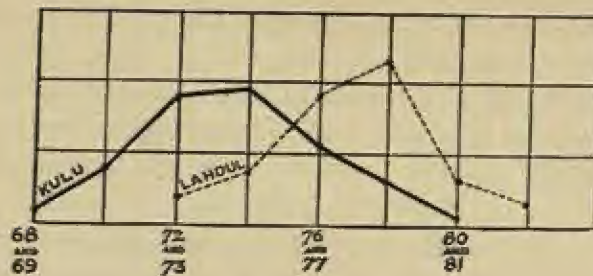
therefore, that anything would be gained by drawing curves for thirty Kanets; such curves, unless the modulus is inconveniently great, would almost certainly differ seriously from those which would be obtained by measuring a larger number, and it is probable that uniformity of curve could only be obtained by measuring at least 100 subjects. I give as an example, to show how the two types overlap, the frequency curves for cephalic indices; but it must be distinctly understood that in this figure (Fig. 1) the curve for the Lahoul Kanets is based only on thirty measurements, and is therefore only an approximation to the truth. Whilst the averages given may be regarded as accurate to within 0.2 in each index, I consider it unwise to strain the figures to any greater extent by expressing the results graphically; by such means one would be liable to substitute precision for accuracy. The degree of variation may, however, be judged roughly by arranging the measurements in the form of tables as follows:—

TABLE X.—*Nasal Index.*

Modulus 5.				Number of Subjects.		
Nasal indices.				Kulu.		Lahoul.
				Odd Nos.	Even Nos.	
56—60	...	...	...	1	1	6
61—65	...	...	...	—	1	7
66—70	...	...	...	7	8	8
71—75	...	...	...	6	9	7
76—80	...	...	...	15	5	2
81—85	...	...	...	1	5	—
86—90	...	...	...	—	—	—
91—95	...	...	...	—	1	—
Totals	...	...	...	30	30	30

TABLE XI.—*Cephalic Index.*

Modulus 2.				Number of Subjects.		
Cephalic indices.				Kulu.		Lahoul.
				Odd Nos.	Even Nos.	
68 and 69	...	...	...	1	1	—
70 " 71	...	...	...	3	4	—
72 " 73	...	...	...	8	8	2
74 " 75	...	...	...	10	7	3
76 " 77	...	...	...	5	6	8
78 " 79	...	...	...	2	4	12
80 " 81	...	...	...	1	—	3
82 " 83	...	...	...	—	—	2
Totals	...	...	...	30	30	30

TABLE XII.
Stature.

Modulus 5.				Number of Subjects.		
Stature in cm.				Kulu.		Lahoul.
				Odd Nos.	Even Nos.	
145—150	...	...	...	—	—	2
151—155	...	...	...	—	—	2
156—160	...	...	...	6	3	8
161—165	...	...	...	9	13	12
166—170	...	...	...	10	11	3
171—175	...	...	...	4	3	3
176—180	...	...	...	1	—	—
Totals	...	...	...	30	30	30

These tables (X, XI, XII) show that, in the case of the nasal index, cephalic index and stature, the curves would, when "smoothed" by adopting a modulus of 5, of 2 and of 5 respectively, be dissimilar in the case of groups of thirty Kulu Kanets, and that in the matter of the nasal index the Kulu results would, moreover, give a discontinuous curve, showing that thirty subjects selected at random would be utterly insufficient for an analysis of the Kulu characteristics. The tables also show that, notwithstanding the known composite character of the Lahoulis, they give more uniform results than the Kulu people. There is, I think, a simple explanation for this in the fact that the Kanet is not a very exclusive caste, admitting the introduction of people from lower castes by processes which have been described by Mr. Risley for other castes in Hindustan. This test, the evidence of the averages when compared with other Punjab castes, and one's knowledge of the habits of the Kanets, agree in pointing to a large infusion of low-caste "black" blood. But for this fact there would not be such a unique chance of obtaining the perfect contact zone which exists in Lahoul; for if the Kanets were more exclusive they would not so readily permit the

introduction of Tibetan blood at the contact of the two peoples. The noticeable imperfections of my work are not without their value; they show that a discriminating analysis by the graphic method is of little value in composite tribes unless the subjects examined number at least one hundred. Before making this statement I drew curves for many of the results recorded by Mr. Risley in his *Tribes and Castes of Bengal*, and found that, by using the moduli above referred to, similar curves were never obtained by dividing each of his groups of one hundred into two fifties; the only approach to uniformity occurs in the case of the aboriginal tribes, in which the blood constituents have had many generations for annealing, with few chances for the introduction of a strange taint.

VI.—SUMMARY OF CONCLUSIONS.

The objects of the investigation described in this paper are:—

- (1) To determine the physical characteristics of the Kanet caste in Kulu, and
- (2) To examine the nature and degree of physical modification due to contact with Tibetan tribes in the neighbouring taluk of Lahoul.

The results of the first object are stated in the summary of measurements on p. 109. The second investigation points to the following conclusions:—

The averages obtained for the Kanets of Lahoul are the result, not of measuring a number of Tibetan subjects mechanically mingled with Indians, but of true blood fusion, resulting in a modification of the Kulu Kanet type in the following particulars:—

- (a) Decrease of dolichocephaly by 4.1 per cent. on the Kulu average index.
- (b) Decrease of nasal index by 10.4 per cent.
- (c) Decrease of naso-malar index by 2.3 per cent.
- (d) Decrease of stature by 2.9 per cent.
- (e) Decrease of facial angle by 4.7 per cent.

We have no precise data as to the physical characters of the Tibetan tribes who have contributed to this composite type, but assuming that they are similar to the Mongoloid people measured by Mr. Risley in the Darjeeling area, the results are in general agreement with what might be expected, *a priori*, from the infusion of Tibetan (Mongoloid) blood into the Kanet caste. But we are unable to state:—

- (f) Whether the percentage depreciation in each characteristic has the same value, or whether one feature has been more affected than another by crossing, and
- (g) Whether the mixture contains an excess of one or of the other constituent.

These two negative results, due first to a want of quantitative correlation between physical criteria, and secondly, to absence of precise data concerning one

of the constituent elements of the cross, suggest interesting lines for further research. To make such an investigation effective it is necessary to possess precise data concerning the physical characteristics of both constituents of the cross, and to measure at least one hundred subjects of the latter taken at random from evenly distributed localities within the area of their distinct predominance.

VII.—EXPLANATION OF PLATES.

The photographs reproduced in Plates VI, VII and VIII illustrate representative types of the two varieties of Kanets. Plate VI shows a group of Kulu Kanet males, whilst Plates VII and VIII are portraits of Lahoul Kanets. The Mongoloid caste of countenance so frequently noticeable in the Lahouli is accentuated by the frequent inability to display a full beard. The man on the left of the group in Plate VIII, who stated his age to be thirty-nine, is a typical example, being able to grow only a few hairs on the chin. In Kulu the men almost invariably shave their chins and cheeks, but are generally able to show a thick growth. With the exception of the straw shoe the men in both areas follow in general a common style of dress; those in Lahoul, however, are less addicted to ornament through deficiency of means. The straw shoe in Lahoul is more elaborate than that of Kulu, being shaped like a slipper with plaits covering the toes and with a distinct heel-piece. The Kulu straw shoe is a mere sandal with a strand over the foot and on the inner side of the big toe to keep it from falling off. The other articles of dress have been described in detail by Captain Harcourt.¹ On account of their peculiarity of dress I have included three women with one of the Lahoul groups.

DISCUSSION.

Dr. KERTH welcomed the contribution Mr. Holland had made to our knowledge of the physical characters of two peoples lying in the Himalayan fringe, between the Mongolian and Aryan races. The chief merit of Mr. Holland's paper, however, seemed to him to lie not so much in contribution of new facts as in the introduction of quite a new aim in the application of anthropological methods. His paper was clearly a study in the results of hybridization of human races, a subject which was of the highest importance, and yet, for some reason, had been almost completely neglected. The deduction which Mr. Holland had drawn, that there was apparently no correlation or proportion in the degree to which the various physical characters were inherited by the offspring, was one he was prepared to adopt, for in no other way was it possible to explain the curious combinations of characters which were found in animals, apparently closely related in descent. For instance, in making an elaborate tabulation of the characters of man, he found that in the characters of the skull, man had most in common with the chimpanzee; in the anatomical features of the limbs, with the gorilla; in the abdominal and thoracic viscera, with the orang. Yet it was highly probable that all these forms mentioned

¹ *Op. cit.* p 137.

sprang directly from a common stock, but the intensity of the heredity had varied with each system.

Mr. GRAY thought Mr. Holland's paper a valuable contribution to the science of heredity, inasmuch as it would help us to understand what changes in the population result from the intermixture of two races of very different physical type. He was inclined to think that Mr. Holland gave rather much weight to the cephalic and other indexes in attempting to trace, in the mongrel race, the characteristics of the primary races from which it was descended. He did not think it probable that correlations were transmitted, because that implies that two dimensions always pass together to the descendants, but it was far more probable that single dimensions pass with little change from one or the other of the parent races to the mixed race. If this hypothesis were correct, then frequency curves of absolute dimensions would be far more valuable for the comparison of the races than frequency curves of indexes. In the frequency curve, say, of the head-breadths of the mixed race, the Lahouli, one would expect to find peaks corresponding to the peaks in the corresponding curves for both the Kulu Kanets and the Tibetans.

Mr. SHRUBSALL said that at first sight of Mr. Holland's figures it appeared to him that the element described as Tibetan in Lahoul was also found among the Kulu Kanets, so that possibly the Tibetans at one time extended further to the south-west into the Sutlej valley. Both groups under discussion would thus be very complete.

Mr. MYRES desired to add his thanks to those of preceding speakers for the valuable suggestions contained in Mr. Holland's paper in regard to the study of mongrel races. The difficulty experienced by Broca in obtaining consistent averages in France arose from the long and various cross-breeding which had marked the history of the French people, and threw no real doubt upon the results derived from a far smaller number of data in the case of relatively homogeneous peoples. In the cases quoted by Mr. Holland of discrepancies between physiognomy and osteological characters, it would be of interest to know whether the physiognomy appropriate to the osteology betrayed itself at all in any part or parts of the face, for in his own experience of mixed races he had frequently noted composite physiognomies of this kind, and had made out certain correlations between physiognomy and parentage, which, if confirmed, would be of assistance in the analysis of mixed types like the subjects of Mr. Holland's paper.

The AUTHOR in reply pointed out that the cephalic index was a ratio independent of the size of the body, whereas the head-length or breadth would, for comparative purposes, necessitate a rational expression with regard to some standard of size, such as the stature. The calculation of an index is merely a precise way of stating the sense of proportion which exists in the popular mind in all forms of classification, and he doubted, therefore, the advantage of adopting Mr. Gray's suggestion to plot head-lengths. The author's figures for the Kulu Kanets show, as Mr. Shrubsall remarked, a marked irregularity of character, which, however, is capable of a simple explanation. The irregular union of high-caste and aboriginal black blood is more easily brought about, and as a matter of knowledge is more common, amongst the Kanets of Kulu than of



Colotype by H. KLEINMANN & Co

Photo by T. H. HOLLAND

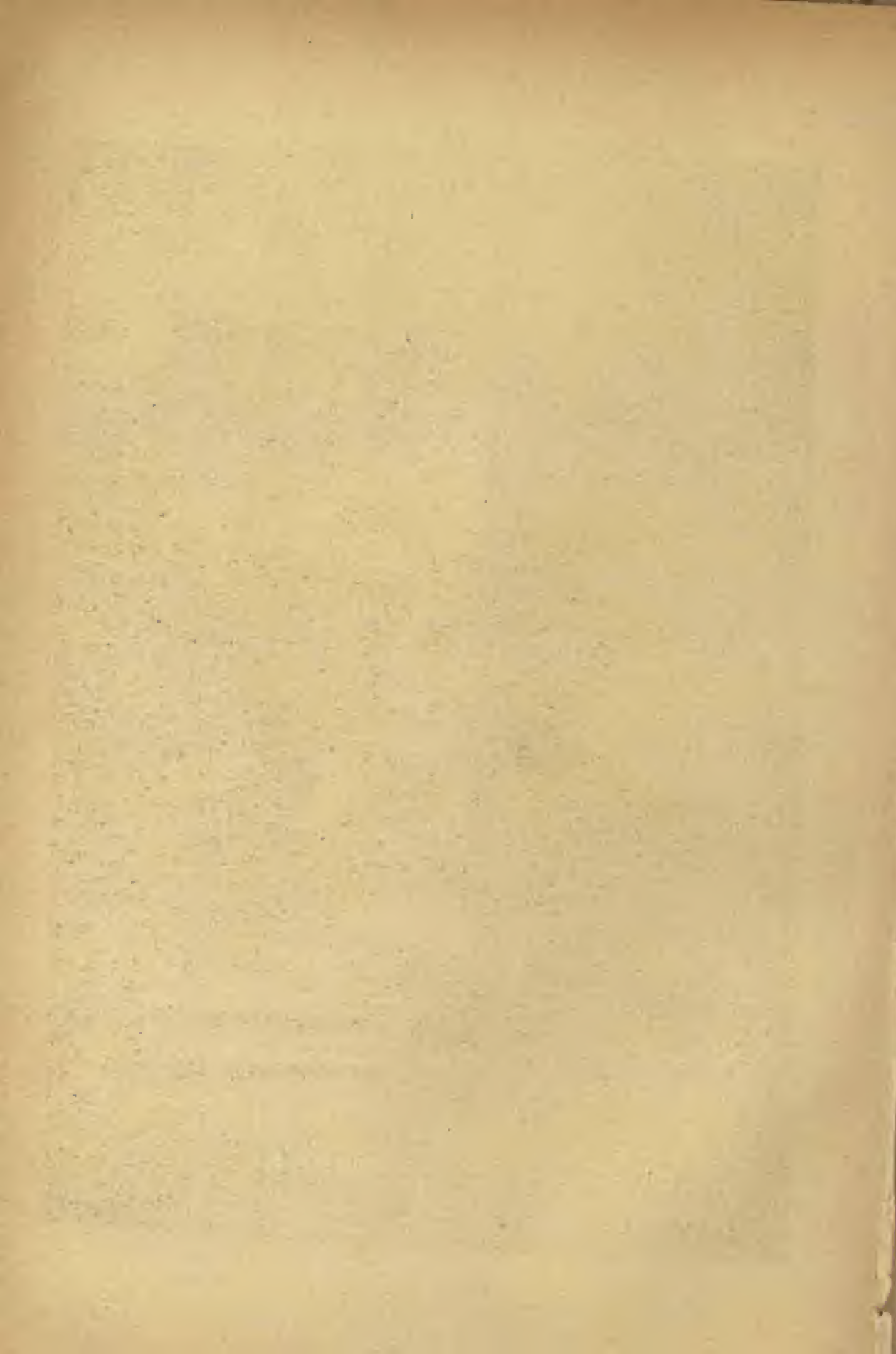
Kanets of Kulu



Collected by H. FLEISCHMANN & Co

Kanets of Lahoul

Photo by T. H. HOLLAND





Colotype by H. KLEINMANN & Co

Kanaks of Laboul

Photo by T. H. HOLLAND



Lahoul. As a consequence, we find in the frequency curves for stature and nasal index the occurrence of two dissimilar types; but there is a greater uniformity in cephalic indices on account of the existence of dolichocephalism in both constituents. The surprising uniformity amongst the Lahoulis must, however, remain unexplained until more measurements are obtained: thirty subjects are barely sufficient for a reliable average and utterly insufficient for the delicate test of frequency curves; the averages, nevertheless, indicate a type intermediate between the Kanets of Kulu and recognized Tibetans, which is in agreement with the history of the caste in Lahoul. The existence of polyandry amongst the Kanets prevents an examination of the interesting questions raised by Mr. Myres as to the relative transmission of characters by the father and mother. So far as these observations go there is distinct evidence in favour of the conclusion that, in the individual resulting from racial *métissage*, there is not a uniform leaning to one of the constituents, but an irregular, apparently contradictory, mixture of the constituent characters, analogous to that which Dr. Keith referred to when the characters of species of the same or related genera are compared with one another. It is possibly this fact which makes any one of the recognized racial criteria insufficiently distinctive when considered alone as a basis for classification. Discussion of the results obtained in Lahoul indicates that the brachycephalism found in India unaccompanied by platyopy, such as we find in the case of the Coorgs, is not due to Mongoloid blood, but to some hitherto unrecognized type.

THE WILD TRIBES OF THE MALAY PENINSULA.

By W. W. SKEAT, M.A.

[PRESENTED FEBRUARY 11TH, 1902. WITH PLATE IX.]

IN addition to the civilized brown-skinned Muhammadan Malays, who are a distant offshoot of the Mongolian stock, there are at least three groups of savage and heathen tribes in the Malay Peninsula, which may be roughly distinguished as follows, according to the character of their hair:—

1. Woolly-haired Negrito Tribes called Semang.
2. Wavy-haired Tribes called Sakai.
3. Straight-haired Tribes called Jakun.¹

Of these the Negritos (Semang) are found in northern Pērak, Kedah, Kelantan, Trengganu and the northern districts of Pahang (Plate IX, 1) the Sakai in southern Perak, Selangor and Pahang (Plate IX, 2) and the Jakuns (mixed with other tribes) in all districts south of the States mentioned down to Johor and Singapore, and also generally speaking along the coasts (Plate IX, 3.)



SEMANG WITH SHAVED HEADS, ULU PERAK. By F. W. Douglas.

¹ This classification is practically based upon that of Professor Rudolf Martin of Zurich, who for some years past has been preparing an important monograph on the very difficult anthropology of these tribes. It differs solely in the isolation of the third (Jakun) type, which is included in Martin's third group under the heading of "Mixed Tribes."

The first of these groups—the Semang—is a fairly pure branch of the Negrito race, which includes the natives of the Andaman Islands in the Bay of Bengal, the Negritos of the Philippine Islands in the China Sea, north of Borneo, and the Semang of Malaya.

A curious point about this group is that it still remains a moot question—as our most recent authorities declare—whether any Negritos occur in Borneo, which would naturally be the connecting link between the Malay Peninsula and the Philippines.

Some day it may be possible to answer this question, but meanwhile it is no less difficult to say who the Negritos really are. They seem to have received their name from the Spaniards, who regarded them as a sort of dwarf Negro race, although they have nothing in common with the true Negroes but their woolly hair and black skin. The old idea seems to have been that they were the offspring of African Negroes who had escaped from slave-dhows which had been wrecked in the Eastern Archipelago; indeed I have heard of one widely recognized authority who maintained that the Negritos were the descendants of African slaves brought over by Alexander the Great when he visited India.

Nowadays, however, anthropology takes a more sober view of racial relationships, and it is pretty generally acknowledged that the Negritos are not Negroes, nor even a branch of the Melanesian or Papuan race, as others have held, although if there is to be guessing, the hypothesis that would appear to have the most likelihood of being some day substantiated is the brilliant suggestion of Sir William Flower, who thought that the Negritos might possibly represent an infantile type of a woolly-haired race, of which the Negro on the one hand and the Papuan on the other were highly specialised derivatives. Even this, however, as I have said, is but guess-work, and for our present purposes we must be content to regard the Negro, the Negrito and the Papuan as the representatives of three very different and separate racial types.

It may, perhaps, be of interest to add that for many years, perhaps on account of the tree-dwelling habits of some of these tribes, it was hoped that the Semang might possess some ape-like attributes. Though these expectations have been shattered, and the Semang cannot henceforth be regarded as possessing an abnormally pithekind character, he still retains the interest which attaches to him as a representative of one of the wildest races of mankind now extant.

The second type of which these races are composed is represented by the Sakai tribes, who offer if possible a yet more difficult problem. An attempt has recently been made to identify them, mainly, it seems, on the strength of linguistic evidence, with what is called the Mon-Annam group of races, *i.e.*, with the tribes who possessed till about 600 years ago the country which is now Siam, and some of whom still occupy Pegu and Camboja.

Linguistic evidence has, however, repeatedly proved a blind guide in the elucidation of racial problems, and I do not think we can depend upon it in the present case. Racial classifications must be based on racial facts, and in the

present case we have the more credible alternative suggested by Professor Virchow for what appears to be a very different grouping.

Virchow's theory is simply that the Sakai may quite possibly belong to what he calls the Dravido-Australian race, the chief representatives of which are the Veddas or wild Tribes of Ceylon, the civilized Tamils of Southern India, the Australian black-fellows and the Sakai of the Malay Peninsula.

In the essential characters of the hair and head, there is certainly a remarkable agreement, and the only great difficulty about this grouping seems to arise from the colour of the skin, which among the Sakais often approaches a light shade of yellowish-brown, whereas among the Tamils black skins commonly occur. Professor Virchow meets this difficulty by pointing out that the Sinhalese of Ceylon, although admittedly Aryans, are frequently so dark in colour as to be called quite black.

This point let authorities decide; all that can be said at present is that it appears an eminently sane and arguable hypothesis; and that it seems to have already found some acceptance. If it is correct, we may, perhaps, suppose that these aboriginal Dravidians once extended far north into Indo-China and there acquired the dialects of the local (Mon-Annam) tribes—an idea about which there is at least nothing fantastic.

The third racial group to which I have referred consists of the Jakuns, an aboriginal race closely related to the Malay, and which, in its pure type, possesses markedly Mongolian features. They belong to what the Germans would call the "Ur-Malay" race, but which we, in the absence of any such convenient prefix, are constrained to call by some such clumsy substitute as Præ-Malay or Proto-Malay—the "savage Malays" of Alfred Russell Wallace. The simplest name to give them is perhaps "Malayan."

This "savage Malay" or Jakun race, or whatever we prefer to call it, is divided into two main groups, (1) the Jakuns of the Jungle or Hill Jakuns and (2) the Jakuns of the Sea or Orang Laut. The latter set of tribes now consist of the broken remnants of the Pirates or Sea-gypsies of the Straits of Malacca, who for so many years were the scourge and terror of those far Eastern seas.

From what I have said it will, I think, be evident how important are the issues which may depend for solution upon our proper study of these tribes. Before closing these notes on the general relationship between these three races and their neighbours, I will therefore give a few more details concerning each of the several types described.

The physical contrast between all three races is most fortunately sharply drawn.

The men of the first-mentioned race (Semang or Negritos) are about 4 feet 9 or 10 inches in height, their women being about $3\frac{1}{2}$ inches shorter. The colour of their skin is very dark brown or black; among the purest-bred Semangs I have seen it a glossy jet-black, not unlike the colour ascribed to the Andamanese, viz., that of a newly black-leaded stove. The shape of the head is mesaticephalic and brachy-

cephalic (*i.e.*, either rounded, or intermediate between the long and round types). The forehead is low and rounded, and projects over the root of the nose, which is short and depressed and pyramid-shaped. The eyes are round and wide open and show no trace of obliquity, the iris being of a very rich deep brown colour. The lips vary from moderate to full, the mouth is rather large, the chin but feebly developed, and a side view of the face sometimes shows some prognathism or projection of the lower part of the facial area.

The hair is of a very dark brownish-black (never blue-black, as among Chinese and Malays). It grows in short spiral tufts curling closely all over the scalp, if not shaved off, as it very frequently is.

The height of the Sakai does not materially differ from that of the Semang,¹ but the colour of the skin is very much lighter than that of the Negritos, and sometimes shows a reddish tinge about the breast and extremities. The head is dolichocephalic or long-shaped. The face is inclined to be long and would be hatchet-shaped but for the breadth of the cheek-bones, which help to give it rather an elliptical outline. The chin is commonly long and pointed; the forehead rather high and flat but brows often beetling, the notch above the nose being very deep; the nose small, often slightly tilted or rounded off at the tip, but at the same time broad, and with very deep-set nostrils. The beard usually consists of a few long and frizzly chin-hairs, remarkably like that of the Veddas of Ceylon, but in some cases it certainly grows long and bushy.

The third class (the savage Malays or Jakuns) is hard to identify, as it has received a large admixture of Semang and Sakai blood. Nevertheless the pure type is, I think, recognisable, and will be found to differ widely from both of the two types already mentioned.

They (the Jakuns) are a little taller than the Sakais or Semangs. Their head is brachycephalic or rounded, their skin olive-brown to dark copper. Their face has a flattened appearance and their lower jaw is inclined to be square. Their nose is somewhat stumpy, *i.e.*, thick and short, but with wide-open nostrils. Their cheek-bones are high and well-marked, like those of the Malays and Chinese. Their eyes are black and of moderate size. Their mouth is large and broad, their hair straight or lank and with a bluish-black tinge to it, not unlike that of the Malays themselves. Their beard is scanty.

In addition to the foregoing three main types we have, perhaps naturally in spite of their antagonistic elements, a good many instances of mixed tribes, most of which can, if the purest types be taken as standards, be resolved with a fair amount of certainty into their original ingredients.

There are many physiological points about all these tribes which would be of great interest, if I had time to go into them. Their arm-stretch for instance is almost always greater, sometimes much greater, than their height. Their feet are usually short and stumpy and splayed, with a remarkable inward curve of the great

¹ For the information about the Sakais (as well as for the type-photograph), I am very deeply indebted to my friend Rudolf Martin.

toe, the prehensile character of which enables them, when spoilt by domestication, to become very clever at stealing. I have seen Semangs run up trees by placing the flat of the foot against the trunk and putting their arms a good way round it. The eyesight of the Sakais, as tested with the army tests, though not abnormal, is distinctly good, and seems to compare very favourably with our own. The Jakun power of scent is exceptionally keen, and I was frequently astonished at the great distance at which they would notice the smoke of a camp-fire in the jungle, many minutes before I could detect the least trace of smoke myself. Their walk is very peculiar, the foot being lifted very high, almost as in dancing, and by this, and a certain restless expression about the eyes, even those Jakuns whose features are most like those of the Malays, can be immediately distinguished when they are met crossing open country.

The food of these jungle tribes—their first and most vital consideration—consists mainly of vegetable products, such as the roots and fruits which they dig up in the jungle, as well as (among tribes who have reached the first stage of agriculture) of the product of light crops such as yams, sweet potatoes, maize, sugarcane and bananas; and at a later stage, of rice. Meat-food consisting of game brought down by the blow-gun or the bow is also largely employed for food, but this is mainly among the Semangs, some tribes of Sakais neglecting to go in pursuit of game until their supply of vegetable food is beginning to run out, though even among a good many Sakai tribes both hunting and trapping are energetically carried on. Some of the yams eaten are poisonous and require careful preparation to render them fit for human consumption; some kinds are buried for days together in a bag in the swamps of the jungle (or in running water), when they are dug up and have the juice squeezed out of them with a lever before being cooked and eaten; other kinds are grated on an ingenious natural grater made of the young growing shoot of a highly prickly rattan or calamus, the grated mass being kneaded with a spatula upon a banana leaf and mixed with slaked lime in order to destroy its poisonous properties, when it is wrapped up in a strip of green banana-leaf, inserted in a split stick and roasted over the fire. At meals, the Semang men, from the oldest to the youngest, all feed together before the females, the latter, who have done the cooking, looking on with hungry eyes until their lords and masters have finished their repast.

In the matter of animal food both Sakais and Semangs eat everything that comes in their way—monkeys, deer, wild pig, birds, fish, porcupines, lizards, squirrels, rats, and mice; not even snakes are excepted from the menu, which it will thus be seen is a sufficiently varied one.

In hunting and trapping, which are employed solely for food purposes, these tribes are, as might be expected, exceedingly expert. They have a marvellous knowledge of the jungle and its inhabitants, and seem to have an instinctive knowledge of the presence of animals, being able, when no one else can, to tell the exact whereabouts of a bird or animal moving a great way off in the forest. Their sight, as I have said, is naturally good, and through training becomes wonderfully

quick. The same is true of their hearing, and, as they are believed to be able to track snakes by their smell, it is evident that that faculty is in no way inferior. They know their way about the jungle better than anyone, and their intimate knowledge of the life-history of the jungle beasts is turned to account in the methods by which they hunt and trap their game.

Hunting and Trapping.

The chief weapon of the Semang (as among Negrito tribes elsewhere) is the bow, which closely resembles that used in the Little Andamans,¹ and with which poisoned arrows are used. That of the Sakai and Jakun is the blow-gun or blow-pipe. This latter is commonly a long slender tube, often 6 or 8 feet long, composed (whenever so long a piece is obtainable) of a single joint or internode of an exceedingly rare species of bamboo, which is found in the Peninsula on two or three high mountains only, and which is called *Bambusa Wrayi*.² This tube is protected and strengthened by being inserted in a similar bamboo tube or case of slightly larger calibre. The darts are made of fine slivers obtained from the mid-rib of the leaf of certain kinds of palm. They are about the size and thickness of a steel knitting needle, and are furnished at one end with a small, conical butt which is made to fit (rather loosely) the bore of the inner tube or blow-pipe. The point is about an inch or more long and as sharp as a needle, and just above it a nick is cut in the shaft of the dart, which causes the point to break off in the wound when the quarry attempts to escape through the tangled undergrowth. The point is, moreover, thickly coated with poison compounded from some of the most deadly poisons known, amongst which are the sap of the well known Upas tree (*Antiaris toxicaria*) and the sap of a shrub called Ipoh Akar, which is a species of *Strychnos*.

The blow-pipe is a breech-loader, the dart being inserted in the orifice, with a light wad of a fluffy substance obtained from the leaf-bases of a palm (*caryota*) packed behind the butt end for the prevention of "windage." It is fired by taking part or the whole of the mouth-piece into the mouth and sharply expelling the air from the lungs. The dart thus poisoned and ready to break off in the wound may in fact be not inaptly compared to the sting of a bee, from which it may quite possibly, to some extent, have been copied.

Even the blow-pipe itself is not without its natural prototype in the Malay Peninsula, in the rivers of which there lives a small fish called *Toxotes jaculator*, which I have myself seen shoot a fly off a leaf several inches above the surface of the river by means of a small drop of water forcibly expelled from its mouth.

By the Sakais each of the darts is carried in a separate reed, about 30-50 of these reeds being lashed together, rolled up into a bundle, and fitted into an

¹ E. H. Man, '*The Andaman Islanders*.'

² A very much rarer kind is the wooden blow-gun of Kuantan, which is made by lashing together throughout their entire length two half-cylinders of wood. One of these latter, measuring 5 feet 2 inches in length, has recently been presented to the British Museum by Mr. F. W. Douglas, of the F.M.S. service.

ornate bamboo quiver. The butt-ends of the darts are frequently marked to distinguish the strength of the poison.

The Semang quiver contains fewer darts than that of the Sakai, and is without reed-bundle, cap, or rings; in fact, it is a mere internode or joint of bamboo which is only remarkable for the beauty of the designs with which it is decorated. Various compounds of the two main poisons to which I have referred are used by the wild tribes, the ingredients varying according to the fancy of the maker. Thus, venom from the fangs of serpents, centipedes, scorpions' stings, etc., is frequently added, though it is in no way really required. Furnished with these darts both Sakais and Semangs regularly bring down their quarry at short distances up to about 30 paces, and have even been known to kill birds and monkeys on high trees at a distance of 60 yards. The method of collecting and applying the coat of poison to the dart-point in its simplest form is as follows: The bark of the tree (when the tree-poison is used) is slashed with a jungle-knife in the shape of a big V. The poisonous sap, which immediately collects at the apex of the V, is then drawn off into a bamboo vessel, and carried home, where it is either, when small quantities are used, as among the Semangs of Kedah, merely heated and applied to the dart points, or prepared by boiling until a sufficient consistency is obtained. In the former case it is poured out into a bamboo-tray, and applied to a broad, wooden spatula, which is heated over a fire until it begins to dry, when the point of the dart is rolled upon the spatula, the dart being then deposited against a fallen tree-trunk to dry in the sun in a safe place. Among some Sakai and Jakun tribes an elaborate kind of drying-rack is used, which prevents the darts, which are very light, from being carried away in a high wind whilst drying.

Habitations.

The most primitive forms of dwelling employed by the wild tribes are rock-shelters (sometimes caves, but more commonly natural shelters under overhanging rocks) and leaf-shelters which are sometimes formed on the ground, sometimes between the branches of trees. The simplest form of these leaf-shelters consists of a single big palm-leaf, which is planted in the ground to afford the wanderer some slight shelter for a single night. The more elaborate leaf-shelters, used especially by Semangs, sometimes take the form of a rude lean-to, consisting of three or four uprights planted in the ground at an angle of about 60° to 70°, with palm leaves or branches lashed horizontally across them. Other kinds consist of palm leaves planted in the ground in the form of a semi-circle or circle, the leaves, which are frequently about 6 feet long, drooping over towards the centre, and thus forming a shelter of the circular or bee-hive type. The most developed form is a long communal leaf-shelter in which all the members of the tribe reside.

The Malayizing tribes who come more into contact with civilization insensibly adopt the Malay type of hut, but even here some striking departures from the normal Malay type are to be seen, *e.g.*, in the low or almost totally absent side walls and in the projection of one side of the gable over the other, so as to allow

the roof to remain open at the top. These huts are generally barricaded with fallen trees.

The tree huts, or "human bird-nests" as they have been called, are built at a height of from 20-30 feet from the ground, chiefly as a means of escape from wild elephants.

Arts and Crafts.

The craftsmanship of these wild tribes, though extremely primitive, is excellent of its kind, and shows that they by no means lack ingenuity.

The manufacture of the blow-pipe, its darts and quiver, as already described, forms an important industry of both Semang and Sakai. The tree-bark cloth of the wilder tribes is made by hammering (with a wooden mallet) the bark of a big jungle-tree called Terap (*Artocarpus Kunstleri*, a species of wild bread-fruit tree), the outer surface of which is first removed by scraping it with a knife. The mallet is frequently improved by transverse grooves or teeth, which assist in the separation of the fibres.

A not less interesting type of cloth is manufactured from the cuticle of the Upas tree (*Antiaris*) itself, a tree which belongs, I believe, to the same order as the *Artocarpus*. In this case a young sapling (of the Upas tree) is felled and a ring cut round the bark a few feet from the base. The bark is then scraped and pounded *in situ* with a rounded wooden mallet or club for a space of about a foot below the incision. The pounded part is then pulled away from the stem, separating at the point where the bark meets the wood, and is turned down (not rolled) and skinned off like a stocking, the scraping and pounding being continued at intervals as required, until all the bark is completely separated.

As regards other forms of industry, mat-work, basket-work, and netting, are all found among these tribes, but no kind of weaving or pottery whatever. A high artistic sense is, however, shown (by the Semang especially) in the beautiful and finely executed designs with which they decorate their blow-pipes and quivers, and the magic combs worn by the women. An amusing example of the skill of the Jakuns was furnished me in the form of a set piece, representing the use of the blow-pipe.

Dress.

The commonest form of clothing worn by the men of all these tribes is the waist-cloth of tree bark, which consists of a long narrow strip of hammered bark. That of the women, on the other hand, is usually a sort of short petticoat or wrapper of the same material. But the most interesting form of girdle worn by these tribes is undoubtedly one which is beautifully woven from the long black shining strings or cords called rhizomorphs, which are in reality the vegetative parts of a toadstool. (Plate IX, 5.)

Leaving the question of girdles there are several other slight but otherwise important items of attire worn by these tribes, such as arm-bands, necklaces and combs. Arm-bands and even leg-bands are frequently worn, apparently for the purpose of bandaging and so strengthening the muscles. They vary from a simple

tie of jungle fibre to metal circlets or spirals, which latter are usually obtained from the Malays.

The necklaces, which are worn chiefly by the women, it would appear mainly for magical purposes, consist at times of as many as nine strings, and are composed of such objects as monkeys' teeth, tufts of hair from squirrels' tails, black and white beads, seeds of jungle fruits, shells, and so forth.

The combs, which bear magical designs, and are worn solely by women, are of the kind which I believe are termed back-combs in England, but which are only worn to defend the wearer against poison or sickness. To complete the picture, tattooing or rather scarification is practised over a limited area among the wilder tribes of the interior, with face- and body-painting (apparently as a substitute for tattooing) in places where Malay influence has begun to enter. The usual pattern consists of four or five horizontal stripes on the cheeks, with a sort of trident or pitch-fork design on the forehead or chin. For the stripes on the cheeks are often substituted rows of black and white dots, supposed to represent what are called the spores, or perhaps more correctly the sori, of a fern. The tattooing is performed by drawing the finely serrated edge of a sugar-cane leaf across the skin, and rubbing into it powdered charcoal.

In addition to the foregoing the septum of the nose is frequently (among the Semang and Sakai only) pierced to admit the quill of a porcupine, bone, or piece of stick, or some other decorative object of the kind.

Music and Dancing.

It would take too long to describe in any sort of detail the musical instruments of these tribes. Suffice it to say that they are almost always made of bamboo, some of the most primitive kinds being of special ethnographical interest, notably the bamboo Jew's harp and the nose-flute. One or two of these latter (Fig. 2)



FIG. 2.—DANCE-WAND, FLUTE AND NOSE-FLUTE.

may be played at a time, the performer breathing into the mouth-hole of the flute through the nostrils. This instrument is found among tribes who do not use the blowgun, as well as among those tribes who do, but the

accomplishment should be an easier one for the latter, *i.e.*, the Sakais, to acquire, from the healthy development of the lungs with the blowpipe exercise. Simpler forms of instruments are represented by a couple of sticks which are struck together, producing a sound like castagnettes, and (among the Semang) by big internodes or "joints" of bamboo, which are closed naturally by the node at the lower end and played by being beaten at the upper end with a fan-shaped palm-leaf beater.

The most important instrument of the Jakuns is the drum, which is made of a

hollowed-out trunk of screw-pine headed with the dressed skins of mouse-deer or monkeys.

On festive occasions, *e.g.*, for singing and dancing, both sexes decorate the person profusely with festoons of leaves. The Sakais and Jakuns in addition wear upon the head a curious circlet made of strips of palm-leaf (*licuala*) in the form of a plait with long streamers so depending from it as partially to conceal the face of the dancer. That of the women has in addition a number of short sticks on which are spitted fragrant leaves or flowers, on a principle of which we seem to have the counterpart in the design of some of our peers' coronets. In the girdle, head-band, and festoons (which are crossed upon back and breast) are inserted bunches or bouquets of cunningly woven strips of palm-leaf representing nooses, etc., which are said to be intended to entrap evil spirits when they make assault upon the person of the dancer.

Finally a short wand or sceptre is carried, which takes at times a most peculiar shape, resembling a series of crescents and double axes. (Fig. 2.)

Feasts and Songs.

In former days at harvest-time the Jakuns kept an annual festival, at which, the entire settlement having been called together, fermented liquor brewed from jungle fruits was drunk; and to the accompaniment of strains of their rude and incondite music, both sexes, crowning themselves with fragrant leaves and flowers, indulged in bouts of singing and dancing, which grew gradually wilder throughout the night, and terminated in a strange kind of sexual orgie.

The songs which were sung on these occasions were sometimes merely topographical, but more often the theme was a description of some one of the denizens or products of the jungle. Commencing by setting forth the attributes and habits of some particular wild animal, or bird, they would proceed to describe the incidents of its pursuit by men from their encampment, its death by a venomous shaft from the blowgun, the return of the successful hunters, and the impartial division of the spoil. It has often been said that these songs are mere gibberish and have no connected meaning. Whether they are so or not, the following extracts will show.

The first is one of the Semang songs which I took down in Kedah. It refers to a kind of long-tailed monkey called "kra," whose name forms the burden of the song.

"He runs along the branches, the kra,
Carrying fruit with him, the kra,
He walks to and fro, the kra,
Over the knotted 'seraya' tree, the kra,
Over the knotted 'rambutan' tree, the kra,
Over the live bamboos, the kra,
Over the dead bamboos, the kra,
Over the giant bamboos, the kra,
He hangs downwards, the kra,
And runs along the branches, the kra,

He runs along and hoots, the kra,
 And peers forward, the kra,
 Among the young rambutans, the kra,
 And shows his grinning teeth, the kra,
 From every sapling, the kra!"

Here is one of the Jakun songs, which is one out of a set of about thirty different ones which I took down in Selangor:—

"'Impit-impit' is the cry of the rhinoceros,
 The rhinoceros of the herd (calling) to the recluse rhinoceros,
 He calls his comrades to seek for food.
 He walks the forest and climbs the hills.
 He walks abroad when the dew dries on the granite.
 What skills it for me to resist the rhinoceros?
 I call my comrades, but my comrades are not there.
 I am terrified and climb up into a tree,
 But the rhinoceros waits at the tree's foot.
 I break off a bough and throw it down to him,
 The rhinoceros champs it, and passes onward.
 I climb down to ground again and run back homewards
 And climb into the hut, but the rhinoceros follows.
 I take my gun and shoot the rhinoceros.
 The bullet has hit him! The rhinoceros has fallen!
 I roast him next and cut up the rhinoceros,
 And give of the meat a little to everyone.
 But the horn I sell to the Chinese foreigners."

Other songs in my collection describe the tiger, elephant, bear, crocodile, birds and bats, fish, various reptiles, and fruit. A very pretty one is about children bathing.

Marriage.

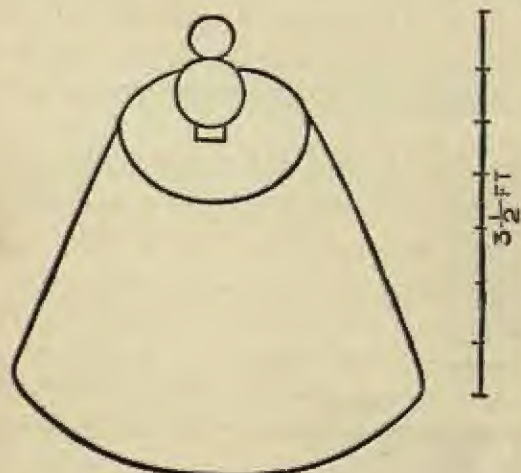


FIG. 3.—*Bunt* OR ARTIFICIAL MOUND OF CLAY
 ROUND WHICH THE BRIDE IS CHASED BY
 THE BRIDEGROOM. (BESISI TRIBE.)

Marriage, among all these tribes, is said to be based on purchase. Of the actual ceremonies the most interesting is the form of wedding rite which is usually described as the ant-heap ceremony. The bridegroom is required to overtake the bride before she has run seven times round the ant-heap, and in the event of his failing to do so the marriage has to be postponed for a future occasion.

This is the usual account given by people who have recorded it from hearsay. I was, however, on one occasion fortunate enough to be

present at one of these weddings, and I then discovered that the orthodox object round which the chasing took place was not really an ant-heap, but a small artificial mound, the cause of the confusion being the use of the Malay word *Busut*, which may bear either meaning. The artificial mound (Fig. 3) which was used on this occasion was about $3\frac{1}{2}$ feet high with about the same diameter at the base. Its shape was that of a truncated cone, surmounted by a small globe and knob. It resembled not remotely a gigantic bell and bell-handle. It was decorated with jungle flowers, and the Jakun chiefs assured me that this was the "genuine article," and that it was the emblem of their religion, and I see no reason for doubting the statement.

Before the pursuit of the bride takes place the man or his proxy is subjected to a severe catechism by the woman's representatives, the questions asked being of a most searching description, *e.g.* :—

Can you fell trees?
Can you climb for fruit?
Can you find turtles' eggs?
Are you clever at using the blowpipe? and
Can you smoke cigarettes?

This last query doubtless relates to the fact that the ceremony sometimes concludes with the smoking of a cigarette jointly by bride and bridegroom.

Among the Orang-Laut or sea-gipsies the pursuit sometimes takes the form of a canoe race, in which the woman is given a good start, and must be overtaken by the man before she has gone a certain distance.

Funeral.

At a Sakai or Jakun funeral the body of the deceased is slung from a pole and carried to a distant spot in the jungle—at least a cock's-crow from the nearest house. Here it is wrapped in a new cloth and buried in a shallow trench, the clothes worn during the life of the deceased being burned in a fire which is lighted near the grave. The grave being filled up, rice is sown upon it and watered, some herbs and young bananas, etc., are planted round it (all of these being for the deceased's soul to feed upon), and finally a small three-cornered hut, not unlike a doll's house, but raised on very high posts, is erected near the foot of the grave for the soul to reside in. The soul's house itself is about a foot and a half high, is thatched with palm-leaves, and provided with a ladder for the soul to climb up by. It contains in addition diminutive emblems of the sex of the deceased (in the case of a man, the model of a hatchet and a jungle knife, etc.; in the case of a woman, the model of a back-basket or wallet, such as is carried by the women of the tribe), as well as a supply of food (a little rice and fish, etc.) for the deceased's soul to feed upon, tobacco for it to smoke, and betel-leaf for it to chew.

The Semang, on the other hand, practise a simple form of interment, a supply of food and drink being placed in the grave along with the body. There is,

however, a tradition that they used to devour their dead and bury the head only, and although this assertion is certainly untrue now, and probably always was so, it is more than probable that like their close kinsmen the Andamanese they may once have been in the habit of disinterring the bones of their dead and breaking them into short segments to string on to their necklaces, in which case the skull may have once been worn, as among the Andamanese, as a sort of pendant attached to the necklace.

Magic.

The chiefs of the tribe were often, if not always, medicine men or magicians, their power in this respect being greatly feared by the Malays, who believed them to be capable of slaying people at a distance by means of what are called "sendings," which were small slivers of bamboo apparently representing darts, which being placed on the palm of the hand would (it was thought), at the magician's bidding, fly through space until they reached their intended victim, whom they would pierce to the heart and kill even at a distance of two or three days' journey.

The Buluh Périndu or "Love and Longing" Bamboo was said to grow upon almost inaccessible mountain peaks. Slivers of this plant were formerly obtained from the Jakuns by the members of Malay travelling theatrical troupes, who inserted them between the teeth, this being believed to render the voice of the wearer irresistible. This custom, however, led, it was said, to such abuses that formerly in some parts of the Peninsula the possession of any portion of the "Buluh Périndu" was punished with the death penalty.

The *chinduai* or *chingkuai* is a small fragrant plant with minute inflorescences (sometimes it is described as a small white five-petalled blossom) which is believed to be one of the rarest and most fragrant flowers in the world.

The story goes that it formerly grew underneath a ledge of overhanging rock on one of the crags of the Ulu Klang mountains. Although the exact spot where it grew could be seen from the ledge, it was nevertheless inaccessible, and it was said that the wild man who wanted it had to ascend the mountain and there keep his fast possibly for weeks or months upon the summit of this ledge until a kite, which used the *chinduai* as medicine for its young, should drop a piece in flying over him. Whatever may be the facts, this particular charm is well known in connection with the Klang country, and is alluded to in the local quatrain which says, "Set not your foot upon the Klang mountains, if you do you will suffer from their charm."

Both Semang and Sakai are great adepts at the exorcism of demons; and on one occasion I saw an apparently wonderful cure effected by this simple means, the patient being a woman belonging to one of the tribes of Semangs in Kedah. We were all sitting and talking quietly in the long communal leaf-shelter in which the tribe lived, when one of the women, who suffered at intervals from agonizing pains in the limbs, was seized with a sudden paroxysm (which made her scream

with pain) and presently leapt to her feet and fled into the jungle. The remainder of her companions, who declared that she had gone into the jungle to die there, slipped out one by one after her, and I decided to follow them to see whether anything could be done. When I arrived I found the woman seated on the ground, while the chief, in his capacity of medicine man to the tribe, was digging away for dear life with a pointed stick to try and unearth the stump of a small sapling which grew near the spot. This he presently succeeded in doing, and on examining the root found what he pronounced to be clear evidence of the demon's recent presence in the curious pinching in of part of the root. He next took earth out of the hole and rubbed it over the patient's stomach and back, muttering charms as he did so, in order to induce the demon to return to the spot whence he had come. In a few minutes the woman began to get better, but as the demons were not yet quite done with, the chief proceeded to dig up the stump of another tree, this time a creeper whose root proved in shape to bear some resemblance to a mandrake. He then repeated the former process, and chanted his incantations more vigorously than ever, at the conclusion of which two of the men of the tribe who assisted him hurled away into the jungle the stems of two saplings which had been lying near the spot, in order, they said, to get rid of the demon's presence. By this time the woman had ceased her lamentations and in about ten minutes' time was pronounced cured, after which she quietly returned to the encampment as if nothing had happened.

The whole performance was an excellent example of sympathetic magic or make-believe.

The most remarkable development, however, of the wild magician's alleged powers is connected with the "tiger-man" beliefs, which are analogous to former European ideas about werewolves. One of the Semang men, whom Mr. Laidlaw and I met at Ulu Aring, in Kelantan, had the reputation of being a notorious tiger-man or B'lian and gave me some interesting information about the performance. "You go," he said, "a long way into the jungle" (usually, he added, into the next valley), "and there, when you are quite alone, you squat down upon your haunches, burn incense, and making a trumpet of your hand blow some of the smoke of the incense through it, at the level of your face, in three directions. You then repeat this process, holding your hand close to the ground; all you now have to say is, 'Yě chōp' ('I am going abroad'), and presently your skin will change, the stripes will appear, your tail will fall down, and you will become a tiger. When you wish to return say, 'Yě wet' ('I am going home'), and you will presently return to your natural form." It sounds easy enough, and the only wonder was that one so seldom heard in that part of the world of the disappearance of an obnoxious rival, or a scolding wife.

The most interesting point about this ceremony, however, is its apparent universality, for it is found, *mutatis mutandis*, in all parts of the globe. In passing, it may be noted that a small variety of ripping-knife (*bēladau*), shaped like a tiger's claw, and fitted with a hole in the haft to pass the finger through, is

well known and used to this day both in the Malay Peninsula and Sumatra, in both of which countries the were-tiger belief is still held strongly.

Religion.

The religion of the Wild Tribes is a form of Shamanism such as prevails in other parts of South-East Asia. They believe in certain greater spirits, who may perhaps, when we have found out all about them, prove to be a sort of gods in the making. But they have, of course, nothing which exactly corresponds to our own idea of God, and the evidence on this subject is more than usually conflicting, owing to the extreme reticence and timidity of these wild men themselves, of whom it would be but little exaggeration to say that they were as wild as deer. Most of them believe that the soul shortly after death proceeds to a place called the Island of Fruits (the Jungle-man's idea of a Paradise), which they not unfrequently identify with the moon. To reach this island they are compelled to cross a boiling lake resembling a copper, by means of a narrow bridge formed of a fallen tree trunk, and the souls of the wicked, failing to accomplish this in safety, fall off the log into the lake, where they swim about desperately for three long years, clutching at the smooth sides of the lake, after which the Chief of the Island of Fruit Trees, if he so thinks fit, contemptuously lets down to them one of his feet so that they may catch hold of his great toe, in which undignified fashion they are at length permitted to escape from Purgatory and to enter Paradise.

DISCUSSION.

Mr. C. O. BLAGDEN apologized for the necessarily provisional and tentative character of the few observations he could make on the subject, inasmuch as he had not come prepared for the honour of being called upon to speak, and was still in the middle of a comparative investigation of the dialects of these aboriginal tribes, being engaged in arranging a large mass of new materials of the Sémang dialects collected by Mr. Skeat. His own personal knowledge of these tribes was confined to various sections of the Jakun group, whom he often met in Malacca during the years 1890-94, and of whose dialects he had made some slight study. Since that time he had from time to time endeavoured to make a comparison of these dialects with those of the Sakai and Sémang groups. Though it must not be expected that the anthropological and the linguistic phenomena would run in parallel lines, it would probably be found that just as these races fell anthropologically into three quite distinct sections, so their languages also, in spite of a certain superficial appearance of unity, constituted three different and originally independent types. There were, however, a considerable number of common elements which ran practically all through the dialects, from Kédah in the north (Sémang group) to Johor in the south (Jakun group). These were attributable to (1) Malay, which of course had more or less influenced all these dialects by means of loanwords; an element which, however, could be readily eliminated; (2) a very considerable Indo-Chinese stratum of words and forms, attributable to the Mon-Annam group of languages, of which Peguan and Cambojan were the best representatives; as to these, the fact of their presence in almost all these aboriginal dialects was

undeniable, but how they got there was not yet satisfactorily explained. There was no contact now between the aborigines of the Peninsula and the people who spoke these Indo-Chinese languages, the latter living many hundreds of miles to the north in Lower Burma and Camboja respectively, and the races were quite distinct; (3) a third common element, the importance of which had never yet been pointed out, was what might be called the generically Malayan or Malayo-Polynesian element (as opposed to the specifically Malay). In most of these dialects there were words, not very numerous perhaps, which, while not occurring in Malay, did occur in closely allied forms in other Malayan languages, such as Javanese, Madurese, Achinese, certain Dayak dialects of Borneo, and other even remoter island languages. He regarded these words not as loanwords from these various tongues, but as relics—the only existing relics—of the old local Malayan dialects of the Malay Peninsula. The main language of the Peninsula had now for some six or seven centuries past been Malay, which was a Central Sumatran language, not originally native to the Peninsula itself. It would be a strange anomaly if, unlike every other region of the Malay Archipelago, the Peninsula situated where it was, and with an aboriginal Malayan population (the Jakun group) had been without a local Malayan dialect or dialects, differentiated from the other Malayan groups. He believed that this third element, common to the aboriginal dialects, represented that now practically extinct Malayan group.

After making allowance for these common elements, and then only, would it be practicable to compare the aboriginal dialects with other languages. There would be a residuum, probably in Sakai, certainly in Sĕmang, left after eliminating the above three strata. It was impossible to say at present what such residuum would turn out to be, but there was some reason for anticipating that in the case of Sĕmang, where it was large and clearly ascertainable, such residuum would turn out to be related to Andamanese; the comparison, however, had not yet been made, but he hoped, after the newly acquired materials had been arranged and classified, to find time to make it, or to induce some more qualified person to do so.

Mr. BOUVERIE-PUSEY asked whether there were any evidences of Mohammedan influence as affecting the religion of these tribes . . . He had been particularly struck with the account of the bridge between earth and heaven, by following which the souls of the departed were believed to approach Paradise.

Mr. SELIGMANN said, I have been especially interested in what Mr. Skeat said about the use of poisoned darts, and should like to know what part of the plant, *Ipoh akar*, is the source of the poison, and how the latter is extracted and used, and whether in Mr. Skeat's experience this poison is ever combined with that derived from the Upas tree, *Antiaris toxicaria*. Is the preparation of the poison the occasion of secret rites, incantations, or religious ceremonies? Kükenthal hints at such among the Kayans of the Baran District of Sarawak, but among their neighbours the Kenyahs I found that collecting, preparing, and applying the poison were frankly utilitarian processes unassociated with any kind of mystery. In Kenyah quivers there were, however, to be generally found certain masses consisting of pieces of old darts, fragments of bone and teeth cemented together by the dried blood of animals already killed. Such conglomerations called *siap* (the

generic name I think for a charm of any kind) had magical properties, and brought success in hunting to their owners. Does anything resembling this occur among the Semang and Sakai? Among the up country Baram folk, who, like the Semang and Sakai, are animistic in their beliefs, there is a regular method of approaching their high gods. A pig appropriately tied up is lightly scorched, and given the message to which an answer is desired. The animal is then killed and its liver inspected for the answer which is deduced from the size and appearance of the lobes, the gall, bladder, etc. At times fire alone may be used to convey a message. It would be interesting to know if Mr. Skeat has observed more or less stereotyped methods of communication with the high gods of the now Malay people of the Peninsula.

Mr. SHRUBSALL remarked upon the apparent close resemblance between some of the Sakais (as shown by the slides) and the Tamils, and asked whether any measurements of the Semang had been obtained, as they would prove of high value for comparison with measurements of the Andamanese. He also asked whether the Semang showed any kind of resemblance to the Central African Pygmies.

Mr. DALTON inquired whether any form of Jew's harp was used by any of these tribes, and whether any of them were known to have used stone implements?

Mr. MYRES remarked that the series of shelters as shown by the slides was interesting as bearing upon the question of the evolution of the hut type, and asked whether the lecturer could throw any light upon the history of the model representing Jakuns in the act of shooting birds, since it resembled models made by some of the Central African tribes, and appeared to belong to an altogether different type of art from that which had produced the rectilinear form of decoration otherwise employed by the tribes of the Malay Peninsula.

Mr. SKEAT, in replying to Mr. Bouverie-Pusey, said that the religion of these Peninsular tribes had been very little affected by Mohammedanism, and that the idea of the bridge leading to Paradise was found among races to the north of the Peninsula, who certainly could not have borrowed it from Mohammedan sources. Perhaps the best example, however, was that of the Andamanese, who were admittedly free from any such influences, but who yet believed that the souls of the departed pass into Paradise by crossing an invisible bridge of cane.

As regards the poison obtained from *Ipoh akar* (the Ipoh creeper or strychnos), the poison was certainly in some instances obtained by shredding up the root. There was, moreover, a close parallel to the Bornean *siap* in the leaves (of a particular kind of tree), which were carried inside their quiver by the Jakuns, and which were called *Pëaurun Tupai*, or the bringers-down of squirrels. Omens were strongly believed in (though not perhaps to anything like such an extent as in Borneo), and an instance of an attempt to communicate with the high gods might probably be found in the Semang and Sakai practice of drawing a few drops of blood from the shinbone with the jungle-knife during the prevalence of a storm of thunder and lightning, and throwing it up to the angry skies with a prayer of propitiation.

As regards the question of measurements, Mr. Skeat replied that a number of Semang measurements had certainly been obtained, and that it was hoped they



SEMANG (PANGAN) OF K. ARING ON LEBIR RIVER, ULU YULANTAN, EAST COAST.



SAKAI TYPE.
(*Photograph by Rudolf Martin.*)



MIXED SEMANG SAKAI TRIBE (ULU PAHANG). (*Photograph by D. Machado.*)



JAKUN TYPE.
(*Photograph by D. Machado.*)



SEMANG GIRDLE MADE FROM RHIZOMORPH OF FUNGUS (KEDAH).

might be published at no very distant date, but he could not yet say whether there was much resemblance between the Semang and the Central African Pygmies, concerning whom scanty details were as yet to hand.

The Jew's harp was used by all three races, Semang, Sakai, and Jakun, the form which it took, a slip of bamboo with a central tongue, which was made to vibrate by pulling a short string, being in all cases pretty much the same, though it was widely different from the form of Jew's harp used in Bangkok, which latter had no string to pull it by, being twanged by the thumb.

The question of stone implements was an exceedingly difficult one. Large numbers of stone axeheads and chisel-shaped stones had been found in various parts of the Peninsula, but there was no evidence whatever to show that they had been manufactured or used by any of the wild races now inhabiting the jungles of the Peninsula. The probabilities were in fact dead against it. The axeheads, which were of types conformable to the iron implements now in use by the Peninsular Malays, belong to an altogether higher culture than that of any of these tribes as we now know them, and among an isolated and pure fragment of the Negrito race (the Andamanese), Mr. E. H. Man had stated that they had never been in the habit either of manufacturing or using stone axes. What they (the Andamanese) did use consisted of such simple forms of neolithic implements as flakes and chips, supplemented by stones which served as anvil and hammer, and the probability was that the jungle tribes of the Peninsula once used more or less similar tools, supplemented by tools of bamboo, bone, and wood. No stone axe or spear-heads had yet been found in the Peninsula.

In reply to Mr. Myres, Mr. Skeat remarked that both the model and the rectilinear patterns referred to were found among members of the same tribe, and that although he himself had certainly made no suggestion of the kind, some of the Malays in the same neighbourhood had recently been paid for bringing him models, and he supposed that the Jakun who made the model had been inspired by the hope of turning an honest penny.

SOME ANTHROPOLOGICAL RESULTS OF THE SKEAT EXPEDITION TO THE MALAY PENINSULA.

By W. LAURENCE H. DUCKWORTH, M.A., Fellow of Jesus College, Cambridge;
University Lecturer in Physical Anthropology,

[WITH PLATE X.]

(a) Description of a Skeleton of a Sakai.

(b) Notes on the Measurements made by F. Laidlaw, Esq., B.A., Trin. Coll.

1. The Natives Measured.
2. The Measurements and Results therefrom.
3. Notes on Two Specimens of Hair.
4. Notes on Two Outline Tracings of the Feet.

(a) THE SKELETON OF A PANGAN SAKAI.

1. Description of the Skull.
2. Description of the Bones of the Skeleton.
3. Critical Notes on the Skull.
4. Critical Notes on the Bones of the Skeleton.
5. List of Measurements.

1. The skull (Figs. 1 and 2), which is in excellent preservation, appears to be that of a male, and is certainly that of an adult. When viewed in *norma verticalis* it is ellipsoid, mesaticcephalic and just phænozygous; it is somewhat asymmetrical, the left side being rather flatter than the right. Synostosis has occurred in the sagittal suture at the obelion, and in the coronal suture on each side at and below the stephanion. Several depressions or pits with almost circular margins are seen on the frontal bone; they are probably local evidences of a general pathological condition found to obtain in almost every part of the skeleton. The glabellar prominence is very moderate in amount, the frontal curve bold, the antero-posterior arc of the cranial vault regular with the exception of a slight interruption at the bregma. No prominence marks the position of the inion. At the pterion, the sphenoid and parietal bones join on each side of the skull. Muscular ridges are feebly developed, and the zygomatic arch is slender. The nasal profile is comparatively flat, but the nasal spine is large; prognathism of the sub-nasal or alveolar, and of the dental varieties, is marked; the teeth in the upper arcade project well beyond those of the lower jaw in the incisor region. The transverse cranial arc is well rounded and is not scaphoid even posteriorly to the bregma; the orbits are mesosemic with bevelled margins; the lacrymal hamulus is diminutive, the lacrymo-ethmoidal suture of considerable length on each side; the malar bone is excluded from entering into the boundaries of the speno-maxillary fissure by the junction, posteriorly to it, of the sphenoid and

maxilla. The nasal bones are large and rather flat; the apertura pyriformis nasi is cordate in outline, and its lower margins are extremely indistinct (orygmo-craspedote). The canine fossæ are moderate in depth; a wide gap separates the alveoli of the two median upper incisor teeth; a blunt spine projects from the malar process of each superior maxilla. The palate is hypsiloid in contour, the teeth large and blackened, and the anterior surfaces of the incisors and canines have been filed. The tuber maxillare is of large size, the posterior palatine spine blunt and notched. The glenoid fossæ are deep, the paracondylar processes small. No special note is necessary on the conformation of the margins of the foramen magnum. In norma occipitalis the contour is almost circular, and the lambdoid suture presents denticulations of moderate complexity. The chief features of the mandible are the slightness of prominence of the chin, the shortness of the ascending ramus, and the shallowness of the sigmoid notch. Reference to the



FIG. 1.—SKULL OF PANGAN SAKAI: NORMA VERTICALIS.



FIG. 2.—SKULL OF PANGAN SAKAI: NORMA LATERALIS.

list of indices shows that this skull should be described as mesaticephalic, metriocephalic, mesognathous, chamæprosopic, microsemic, platyrrhine, mesoprosopic, and mesocephalic.

2. The whole of the vertebral column, with the exception of the coccyx, has been preserved. On the cervical region no special notes have to be made, no additional foramina are seen in the atlas, and the lower vertebral spines (except the seventh) are bifid. No marks of inferiority are observed here or in the thoracic region; the lumbar region appears very straight when the several vertebrae are placed in apposition, but the intervertebral discs when *in situ* may have given a very different aspect to this region. It is noteworthy that the signs of the periosteal inflammation so widespread in this skeleton are hardly observable here (*i.e.*, in the vertebral column). There is no special remark to make about the sacrum. The scapulae are small, with deeply excavated subscapular fossæ; they are relatively very broad, and the inferior angle is curiously truncated in each;

the roughness of the surface of the bone due to periostitis is well marked here, the bone near the vertebral border having actually been perforated in the right scapula. The same roughness is very marked on the somewhat large acromion processes, especially at the attachment of the middle part of the deltoid. The coracoid is large in each scapula and the upper border very straight. The clavicles show evident signs of disease. It is doubtful, however, whether this very peculiar form is altogether pathological; the peculiarity consists in the exaggeration of the normal curve (with concavity directed forwards) of the outer part of the bone. The two portions of the bone meet at about a quarter of its length from the outer end, at an angle which in the right clavicle is nearly 90 degrees.

The sternum is flat, and the gladiolus and manubrium still separate; only six facets for rib cartilages can be distinguished on each side.

The ossa innominata give useful evidence as to the sex of the individual, for the smallness of the subpubic angle indicates clearly the male sex. The ilia are, however, somewhat splayed, and their crests not so much incurved anteriorly as in European pelves. The ilio-pectineal lines are prominent ridges.

There are twelve ribs from each side, showing in many cases irregularities of surface due to pathological causes; there is accordingly some difficulty in identifying the side to which certain of them belong, the upper margins in particular being very sharp.

The bones of the hand and foot are incomplete in number, and the chief remark to be made is that the ravages of disease are very marked in the bones of the feet, and especially so in the os calcis of each foot and in the metatarsals, the fifth being particularly deformed.

The long bones of the limbs are present, with the exception of the right radius and ulna. The humeri and tibiae bear many traces of periostitis, the fibulae, the radius, and ulna of the left side to a less extent than the bones first mentioned, the least affected of all being the femora. The latter are, in fact, the only bones which afford reliable information. They are rather straight in the shaft; no pilastering is seen, though the lineae asperae are fully developed; there are distinct accessory adductor tubercles; and partly owing to a flattening of the anterior aspect of the shaft opposite the popliteal space, partly to its own development, the anterior limit of the articular surface of the lower end terminates on a very marked prominence. Platymeria (transverse) is distinct, and no bulging of the shaft is seen posteriorly in the popliteal space.

3. Speaking generally, the characters of the skull are not such as will cause it to be referred at once and unhesitatingly to any well recognized type. It would not have been surprising to find that such a skull was brachycephalic and microcephalic, like the crania of Andamanese and other Negrito races. But the specimen under consideration is mesaticephalic (78.7) and mesocephalic (capacity 1,425 cc.).

We note, however, certain characters of inferiority. In the first place may be mentioned two features (often seen in lower races) which are to be regarded not as

racial peculiarities, but as constituting retentions of conditions normal in infancy; these are rotundity of contour in norma occipitalis, and shortness of the ascending ramus of the mandible. The condition of the teeth and of the cranial sutures leave no doubt as to the skull having reached full maturity.

In the next place the conformation of the skeleton of the nose, and the prognathism, which is of the variety known as subnasal, and is moreover both alveolar and dental, constitute resemblances to skulls met with frequently among the negro races; moreover, the resemblances are to African and especially certain Central African crania rather than to those of Oceanic negroes. The lack of distinctness in the characters which usually determine sex is also in favour of this view (*cf.* Shrubsole).

No definite resemblance could be traced, however, to the crania of Bush natives of South Africa (and this is all the more noteworthy because in certain characters the other bones of the skeleton resemble those of the Bush race in the Cambridge Museum), nor to the crania of the natives of the Punjab, nor to a skull from Manilla, nor lastly to that of a Veddah. But it is important to notice that the facial features are similar to those of certain crania from Sumatra, Java, and Borneo (*cf.* Nos. 882, 927, 966, 967, at the Museum of the Royal College of Surgeons) and to one Andamanese cranium in the same collection. From the morphological standpoint we may say, then, that the cranium presents several features common to the lower races, any of which may, however, occur in skulls of the highest races; and further that the concurrence of such characters in the same cranium confers upon it marks of inferiority not revealed by a superficial examination.

4. *Comments on the Skeleton.*—It is necessary again to refer to the pathological changes that have taken place in the skeleton. It is noteworthy that the articular surfaces of the bones are, comparatively speaking, but little affected, the non-articular surfaces suffering most. Thus this is not a case of osteo-arthritis, but there are not lacking conditions resembling those described by Virchow (*Zeitschrift für Ethnologie*, 1895, p. 709) in the humerus of a bear, under the name of Hohlengicht. [It is a matter for discussion whether the disease was that called by Virchow (*loc. cit.*) elephantiasis.]

The skeleton seems to have been originally slight and slender, and the individual was of small stature, probably about 1,497 mm., which, as will be seen later, is a stature very near the average of Pagan men.

In comparison with the dwarf skeletons of Bush natives, several points of comparison present themselves. Firstly, the size and proportions of the scapulae are not unlike in the two cases, though the acromion and coracoid processes are much more massive in the Sakai skeleton. It may not be out of place to mention that the Bush and Sakai scapulae differ alike from those of the orang-utan and chimpanzee, somewhat less from that of the gorilla.

The second point of similarity is the slenderness at the lower ends of the femora in the Bush and Sakai skeletons alike.

In the third place, an accessory adductor tubercle appears on the femora of both skeletons.

Lastly, the size and general shape of the ossa innominata and the comparative lack of curvature of the iliac crests constitute further resemblances. On the other hand, differences obtain in the sacra, and on the whole the Sakai bones are larger. The great length of forearm said to characterize the Andamanese is not present in the Sakai.

To sum up, then, we find here again certain signs of similarity with the skeleton of one of the lower races and departures from the higher types; the platycnemia has not been discussed, as the evidence derived from such pathological specimens scarcely justifies it.

From such a general comparison, we must turn to the special comparison of this skeleton with those described by Professor Sir William Turner in the *Transactions of the Royal Society of Edinburgh* (vol. xl, Part 1, No. 6) as representative of Sakais. But from the figures and description of the first of those examples, consisting of the skull with parts of the skeleton, it can only be concluded that the resemblances with the Sakai skeleton which forms the subject of the present contribution are quite insignificant. The following figures for various characters will demonstrate clearly these differences.

A. = Turner's specimen from Kampar.				B. = Cambridge specimen.	
—				A.	B.
<i>Skull :</i>					
Capacity	...	...	...	1155	1425
Breadth index	...	...	...	74.6	78.7
Height index	...	...	...	76.5	72
Nasal index	...	...	...	58.5	55.3
Orbital index	...	...	...	78	82.3
<i>Skeleton :</i>					
Sacral index	...	...	...	102	108.6
Pelvic (brim) index	...	...	...	108.5	?
Radio-humeral index	...	...	...	80.2	78.3
Tibio-femoral index	...	...	...	80.9	87.7
Platymeric index	...	...	...	78	74.7
¹ Intermembral index	...	...	...	68.3	68.2
Femoro-humeral index	...	...	...	68.7	{ 72.3
Estimated stature	...	...	...	1365	{ 71.8
					1497

¹ Closest approximation.

The comparison need not be pushed further, and this part of the subject must be concluded with the remark that even among aboriginals of the Malay Peninsula, who agree in the possession of small stature, the variations in skeletal and cranial morphology are very considerable.

The second example described by Turner is a skull possessing a certain

number of points of resemblance with the Cambridge specimen, and these are exhibited in the following table:—

Character.	Turner's Specimen from Pahang.	Cambridge Specimen.
Cranial capacity	1385	1425
Breadth index	79.4	78.7
Height index	76.6	72
Nasal index... ..	51	55.3

Finally, when comparisons are instituted between the Cambridge specimen and the "Pangghan" skull described by Virchow (quoted by Turner *loc. cit.*, p. 119), the following results are obtained, as shown in the table:—

Character.	Virchow's "Pangghan."	Cambridge Pangan.
Capacity	1370	1425
Breadth index	81.5	78.7
Height index	76.9	72
Orbital index	80	82.3
Nasal index... ..	50	55.3

The similarity is no greater than in the preceding case. On the whole, the conclusion that will be arrived at is, in my opinion, that intermediate forms of skull connect the distinctly dolichocephalic and brachycephalic types described by Turner, and that it is impossible to say whether the intermediate or either of the extreme types is the original one. It would be out of place to enter into a discussion of the cranial characters of the Malays, but examination of the Malay crania in the Museum of the Royal College of Surgeons in London shows that here also a great diversity of cranial form obtains.

5. LIST OF MEASUREMENTS OF SKULL AND OTHER PARTS OF SKELETON OF SAKAI.

MEASUREMENTS OF SKULL.

Description: Pangan from Malay Peninsula, collected by W. Skeat, M.A.		Bi-zygomatic breadth	134
		Orbital height	33
		Orbital width	40
		Nasal height	47
		Nasal width	26
		Jugo-nasal arc	107
		Jugo-nasal width	97
Cranial portion:		Indices:	
Maximum length	179	Cephalic	78.7
Maximum breadth	141	Altitudinal	72
Bi-zygomatic height	129	Alveolar	102
Horizontal circumference	511	Facial (Kollmann's)	46.2
Cranial capacity. Each observation (2) gave 1,425 cc. = mesocephalic		Orbital	82.3
		Nasal	55.3
Facial portion:		Naso-malar	110.3
Bi-nasal length	99		
Bi-alveolar length	101		
Nasi-alveolar length	62		

MEASUREMENTS OF BONES OF THE SKELETON.

<i>Bone, etc.:</i>	R.	L.		
Humerus	308	305	Second	23
Radius	?	239	Third	24
Femur	426	425	Fourth	25
Tibia	374	372	Fifth	27
Ulna	?	253	Index given by combined figures	97.5
Fibula	365	361		
Radio-humeral index	?	78.3		
Tibio-femoral index	87.7	87.5		
Intermembral index	?	68.2		
Femoro-humeral index	72.3	71.8		
Sacrum	(Length 93)	(Breadth 101)		
Scapula—height	117	125		
" breadth	102	103		
Sacral index	108.6			
Scapular index	87.1	82.4		
Clavicle	119	129		
Claviculo-humeral index	38.6	42.3		
	Anterior height of Centrum.	Posterior height of Centrum.		
Lumbar vertebrae:				
First	23	25		

Second 23
Third 24
Fourth 25
Fifth 27

Index given by combined figures 97.5

FEMUR, special measurements for:—

Platymeria: R. L.
Transv. diam. 27 27
Antero-posterior diam. 20 20
Platymeric index 74.7 74.7

Platycnemis:
Transv. diam. 21 19
Antero-posterior diam. 33 29
Platycnemic index 63.6 65.5

Popliteal region:
Transv. diam. 33 34
"M.N." 26 25
"M.P." 23 23
Popliteal index 69.6 67.6

6. *Note on the Photographs.*—The skull is represented as viewed in norma verticalis, (Fig. 1) and in norma lateralis (Fig. 2) orientated in each case according to the "Frankfort" horizontal line.

The appearances will be found described in Section 1.

(b) MEASUREMENTS ON THE LIVING.

The natives measured were eleven in number, and of these five were adult males, three adult females, and three immature, viz., a boy of fourteen, a girl of fifteen to seventeen, and a female child of three to four years. With regard to the elder girl, a review of the measurements led me to disregard them in the computation of the averages for adult females, although this individual in other respects might be looked upon as practically mature. Mr. Laidlaw's notes on each individual are appended.

Mr. Laidlaw's descriptive notes on the individuals measured.

1. Residence, Sungei Bumit in Aring. Formerly top teeth were filed down with sandstone in Malay fashion. Skin much scarred. Lips thick, slight straggly beard. Feet curved inwards and much splayed, little toe of left foot missing. Non-Mohammedan, stated his age to be forty-five years. Formerly married, no children.

2. Residence, Sungei Bumit. Slightly deaf. Lips thick. Feet contours normal. Head shaved with a razor given him by Penghulu of Kampong Buntal. Unmarried, Pandak's brother-in-law. Very restless.

3. Slave living near Kampong Buntal. Parents lived in jungle of Ulu Lebit.

No. in Mr. Laidlaw's List.	Numerical Order.	Name.	Age.	Sex.	Race.	Stature.	Height at Right Shoulder.	Height at Right Elbow.	Height at Right Wrist.	Height at Right Middle-finger.	Height at Right Hip Bone.	Height at Right Knee.	Height at Right Ankle.	Height at Sternum.	Height, Sitting.	Span.	Biacromial Breadth.	Head Length.	Head Breadth.	Breadth of Forehead.	Breadth of Cheek Bones.	Bigonial Breadth.	Tragus to Vertex.	Nasion to Chin.	Top of Forehead to Chin.	Nose Length.	Nose Breadth.	Interocular Breadth.	Skin Colour.	Eye Colour.	Hair Colour.	Ear Shape.	Teeth.	Cephalic Index.	Nasal Index.
1	1	Pandak	45	♂	Pangan.	1548	1285	970	704	510	895	440	85	1280	633	1745	365	195	144	96	140	120	134	105	170	42	45	31	lighter than 3 (a, b). (Topinard).	grey brown (d).	black, woolly.	moderately large.	several incisors missing, teeth stained with betel.		
2	2	Chatu	20	♂		1516	1285	973	770	582	884	408	80	1252	623	1596	345	186	148	116	143	120	144	105	171	40	42	29	darker than Pandak.	dark brown.	black, curly.	moderately large, lobe not distinct.			
3	3	Badin	about {25 } 27	♂		1466	1203	922	695	495	—	402	—	1220	648	1560	340	188	140	—	127	—	125	—	—	40	41	32	3 (Topinard), chocolate.	very dark brown.	very brown, curly.				
5	4	Ragong	about {25 } 27	♂		1472	1201	906	696	524	811	388	68	1200	730	1566	310	184	154	103	138	110	140	106	173	41.5	41.5	31.5	a little lighter than (3).	dark brown.	closely curled.		not filed, white, much worn, no decay.		
6	5	Petai	35	♂		1456	1198	925	708	564	840	402	66	1193	733	1545	315	173	145	93	140	119	126	99	170	41	38	28	lighter than Ragong.	dark brown, pupils large.	similar to Ragong's.		6 filed, decay.		bearded: brow-ridges prominent.
	6	Average Male	—	—		1491(?)	1286	939	715	535	857(?)	408	75(?)	1229	674	1602	335	185	146	100(?)	138	117(?)	134	104(?)	171(?)	41	41.5	30						78.9	101.2
4	7	Badin	14	♂		1420	1179	933	750	568	—	382	72	1152	651	1389	315	186	142	105	125	115	130	88	167	35.5	36	30	3 (Topinard), chocolate.						
7	8	Yak Bertik	45	♀		1420	1161	896	682	524	835	389	65	—	—	1495	—	175	133	90	126	116	120	101	150	39	36	32	darker than 3 (Topinard).	dark brown.			hardly any left.		
8	9	Moh Lek	35	♀		1379	1143	875	676	485	795	381	64	—	600	1458	280	170	143	95	128	119	123	90	164	42	40	34							
10	10	Kebang	about {23 } 25	♀	Orang Teku.	1434	1166	875	692	542	842	382	78	1173	715	1186	210	181	151	100	134	116	125	91	163	36	39	31	redder shade of No. 3 (Top.)	very dark rich brown.	black, lanky like Malay.				
	11	Average Female	No. (3)	♀	Pan-gan.	1406	1163	882	683	550	838	384	69	1173(?)	657(?)	1478	295	175	142	95	129	117	123	97	159	39	38	32						81.1	97.4
9	12	Kutun	about {15 } 17	♀	—	1328	1071	832	620	444	757	297	45	1075	715	1360	280	174	142	100	121	106	120	86	153	30	34	30	upper arm No. 5 (Top.), back of neck No. 3 (Top.)	dark brown.	thick, short, woolly.	small.	6 upper teeth filed.		
11	13	Parents {Nos. 3 } Kepar (infant)		♀	Pan-gan and Orang Teku.	992	773	592	460	326	508	250	35	780	40	99	210	168	134	93	110	100	114	82	147	31	30	27	No. 3 (Top.), with more red in it.	brown, darker than parents.			Teeth (milk-dentition) quite regular, upper median incisors very large, laterals smaller, canines large, lower incisors small but regular.		

Middle finger of right hand deformed. Age stated by himself to be seventy years. Married, with two children. Colour 3 Topinard's scale. Eyes dark, rich brown. Hair short, woolly, very dark dull brown. Rampong Buntal.

4. Brother of No. 3. Slave, captured when very young. Religion, Mohammedan. Colour 3 Topinard's scale. Colour vision normal or nearly so, tendency not to distinguish between dark shades, dark purples being compared with dark reds, but rejected. The boy is very nervous and taciturn. Residence, Kwala Aring.

5. Residence, Sungei Sam. Son of No. 7. Skin a little lighter than Topinard's No. 3. Hair wiry, very closely curled. Teeth not filed, much worn, but white and undecayed. Non-Mohammedan. A slave; parents Pangans of Sungei Lebih. Has a moustache.

6. Petai or Petema. Residence, Sungei Sam. Skin a shade lighter than No. 5, covered with skin disease of a mild type. Eyes dark brown, strongly marked superorbital ridges. Eyes very restless. Has a moustache and beard of woolly hair. Six front teeth of upper jaw filed, slightly decayed. Has a humorous expression about the mouth. Parents from Sungei Gala.

7. Slave at Sungei Sam. Skin darker than No. 3 Topinard. Feet much splayed, as in No. 1. Eyes dark brown. Skin diseased.

8. Slave at Sungei Sam.

9. Slave girl at Kampong Buntal. Unmarried, but sexually mature. Feet and hands small and delicately shaped. Hair short, thick, and woolly. Parents lived in Ulu Aring. Inclined to steatopygia.

10. Wife of No. 3. Skin rather redder than No. 3 Topinard. Hair black and lanky like a Malay's. Eyes very dark brown. Parents and grandparents Pahang Sakais living on Sungei Sahan, tribe now moved down stream, no Malay admixture admitted. Mother of No. 11. Breasts very pendulous.

11. Daughter of No. 3 and No. 10. Skin colour No. 3 Topinard, but rather redder. Eyes dark brown, darker than in parents. Teeth, milk teeth, perfectly regular, the upper pair of incisors very large, two next smaller, much as in English children.

From the measurements provided, I have calculated the averages for each sex, and have embodied the results in a diagram which will show the general outcome of this method of dealing with the data (Fig. 3). The consideration of this I propose to defer temporarily while dealing with the other observations of Mr. Laidlaw. In the first place, the colour of the skin seems in general to be dark brown or chocolate, but there are two cases in which it was lighter than in the rest, and this point is of importance as confirming the statement made by recent observers (Martin) that the aborigines of the Peninsula may be divided, on considerations bearing on skin-colour, into at least two well marked classes, the one with a lighter skin than the other. As regards the colour of the eyes, a corresponding difference is not recorded, and in all instances the colour is a dark brown, probably of the shade so common among primitive races.

On coming to work through the notes on hair, it is found, however, that whereas in the majority it is woolly or closely curled, there is one instance of an adult, the woman Kebang, in whom the hair though black is not curled, but straight; this difference again confirms the remarks of earlier observers, and in the lantern slide showing a group of Sakais examples of each kind of hair may be seen.

Finally, it is very interesting to notice that among the specimens of hair shown is that of the child Kepar, of whose parents one (the father) is of the curly-haired type, the mother being the one example of all those observed presenting straight hair; the specimen of the child's hair shows that she resembles her mother in this respect.

With the mention that only one bearded man was observed, I may pass from the consideration of the hair to that of the teeth, which in many instances were seen to be filed; in one instance caries was noticed. In the skull sent to Cambridge the teeth are encrusted, as is so often the case with the teeth of crania of East Indian natives in general, with a dark deposit, probably betel nut. The front teeth in this specimen have been filed (*cf.* account of the skull).

Returning now to the measurements, it may be first noticed that the index of the head (cephalic index) gives for the men an average of 78.9, which agrees fairly well with the figures obtained for the skull previously described. The women would seem to have heads of a more spherical form, for the corresponding average index for these is 81.1; a greater number of examples (only three are available) would probably modify this figure somewhat.

Next the nasal index may be considered, and this yields the remarkable figure of 101.2 as the average for five adult males, and 97.4 as that for three adult females. A very great nasal width is indicated hereby, and to one familiar with the measurements in question the figure alone gives a fairly good idea of the conformation of this particular feature.

The majority of the remaining measurements are, as has been already said,

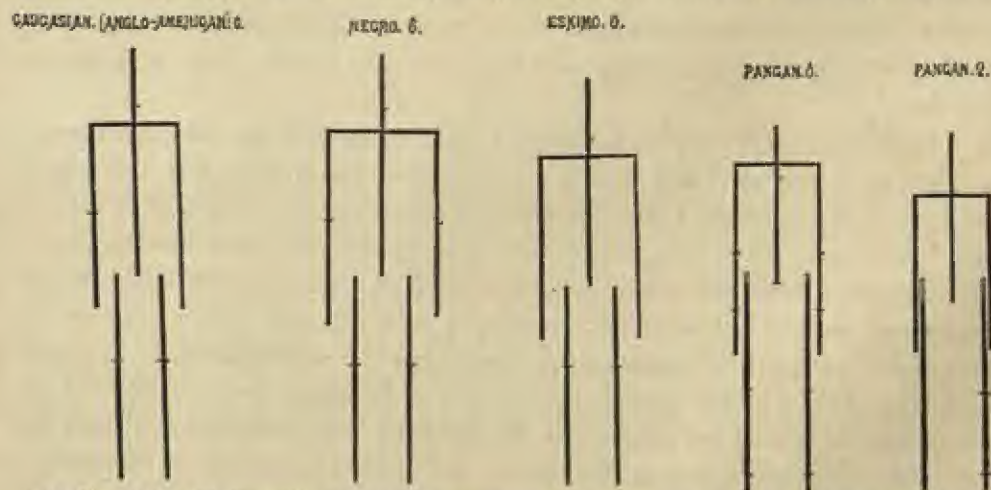


FIG. 3.—DIAGRAMS SHOWING RELATIVE PROPORTIONS OF AVERAGE CAUCASIAN, NEGRO, ESKIMO, PANGAN SAKAI (MALE), AND PANGAN SAKAI (FEMALE).

embodied in diagrammatic forms in the drawings to which attention may now be directed.

In the first diagram (Fig. 3) is seen the figures of the adult Pangan individuals of the two sexes compared with one another. It is necessary, moreover, to notice, though it is not indicated on the diagram, that the average man with a stature of 1,491 mm. (about 4 feet 9 inches) exceeds the woman by about 83 mm. or $3\frac{1}{2}$ inches.

Secondly, the position of the presternal notch with reference to the bi-acromial line should be remarked.

Lastly, the Sakai diagram may be compared with those of other races. I have represented for comparison diagrams (for two of which I must express my indebtedness to Professor Thomson of Oxford) of adult males.

1. Anglo-American... .. stature 1,705.
2. Negro " 1,680.
3. Eskimo (Labrador) " 1,577.

[*Cf. Journ. Anthropol. Inst.*, vol. xxx, 1901.]

Which combine with the Sakais to form a curiously regular series (diminuendo)

The following notes refer to the specimens of hair:—

No. 2 (♂).—Close coils; hair of a frizzled type characteristically negrito.
Diameter of coils = 15 mm.

"Kutun" (♀).—Frizzly hair, which is long and thus to some extent unlike the preceding.

"Pandak" (♂).—Close coils; same type as "No. 2." Diameter of coils 15 mm. (less in parts).

"Bihyah" (♀).—? Malay female; long, straight hair tied in coil; quite different from the three preceding examples.

* "Pa-Gelugor" (♂ aged).—Hair frizzly and rather long (about 70 mm.), and thus differing somewhat from No. 2.

* "Apiat" (? sex).—The hair has much the same characters as that of "Pa-Gelugor," but is slightly shorter.

* "Kachong" (? ♀).—The hair is frizzly and closely resembles that of "Kutun."

[* The last three examples are from Jarum in Raman.]

Notes on the outline tracings of the feet.

			Maximum length.	Maximum breadth.
"Pandak" R.	...	...	246	103.5
L.	...	...	246	97
"Yak Bertik" R.	...	...	228	96
L.	...	...	230	90
"Ragong" R.	...	...	231	99
L.	...	...	229	101

The tracings of feet comprise the following:—

"Pandak."—Right foot: broad; hallux turned inwards slightly.

Left foot: like right foot, but the small toe seemingly absent, or much reduced in size (possibly it has not been pressed against ground). (Pl. X, 1, 2.)

"Yak Bertik."—Smaller foot; hallux as in Pandak's foot; the outer border of the foot is straight. No special differences between right and left feet, except that in the left foot the toes do not seem to have been properly pressed against the ground. (Pl. X, 3, 4.)

The appearance of the tracings of the left feet of Pandak and of Yak Bertik give some confirmation of the statement made by Miklouko-Maclay to the effect that in the feet of the Sakai tribes the outer toes are curved inwards and beneath the inner toes (*cf. Zeitschrift für Ethnologie*, viii, p. 228).

"Ragong."—No special points of difference in right and left feet; the toes are all clearly marked; the hallux is not inverted so distinctly as in the two preceding cases. (Pl. X, 5, 6.)

In none of these examples is the second toe longer than the hallux. The measurements are given on the preceding page.

Note on the Illustrations.

Plate X.—Tracings of the feet of Pangan natives.

Fig. 1.—View of the skull of the Pangan native. *Norma verticalis.*

Fig. 2.—" " " " " " " " *lateralis.*

Fig. 3.—Diagrams representing the physical proportions of average individuals of various races.



Pandak ♂

(1)



Pandak ♂

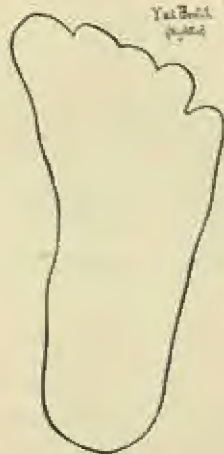
(2)

Pandak ♂



Yak Bertik ♀

(3)



Yak Bertik ♀

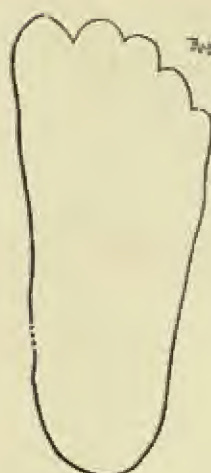
(4)

Yak Bertik ♀



Ragong ♂

(5)



Ragong ♂

(6)

Ragong ♂

TRACINGS OF FEET OF PANGAN SAKAIS.

NOTES ON DYEING AND WEAVING AS PRACTISED AT SITIAWAN IN PERAK.

By L. WRAY.

[WITH PLATE XI.]

THE method of weaving which is carried on to a limited extent at Sitiawan by a few Malay women, was introduced from Kelantan, and differs from that in other parts of Perak in several important particulars. As it does not appear to have been previously described, a few notes on it may be of interest.

The material used is silk. This comes from China, and is purchased by the weavers at Singapore for about \$3 per pound. It is then in a raw state, harsh, and of a yellowish colour, and before use it has to be cleaned by washing with water and wood ashes. The ashes of the husk of the fruit of the durian (*Durio zibethinus*), of the husk of the silk-cotton (*Eriodendron anfractuosum*), or of the fruit-stalks of the coconut palm (*Cocos nucifera*) are employed for this purpose. After treatment with this lye, it is rinsed in clear water and dried, when it becomes white, soft, and silky, and is ready for dyeing.

The patterns are produced by a process of tie and dye, but unlike the Indian method, it is the thread before weaving which is tied and dyed, and not the woven cloth. It is, as a rule, the thread of the warp which is dyed to produce the pattern, the woof being of one colour.

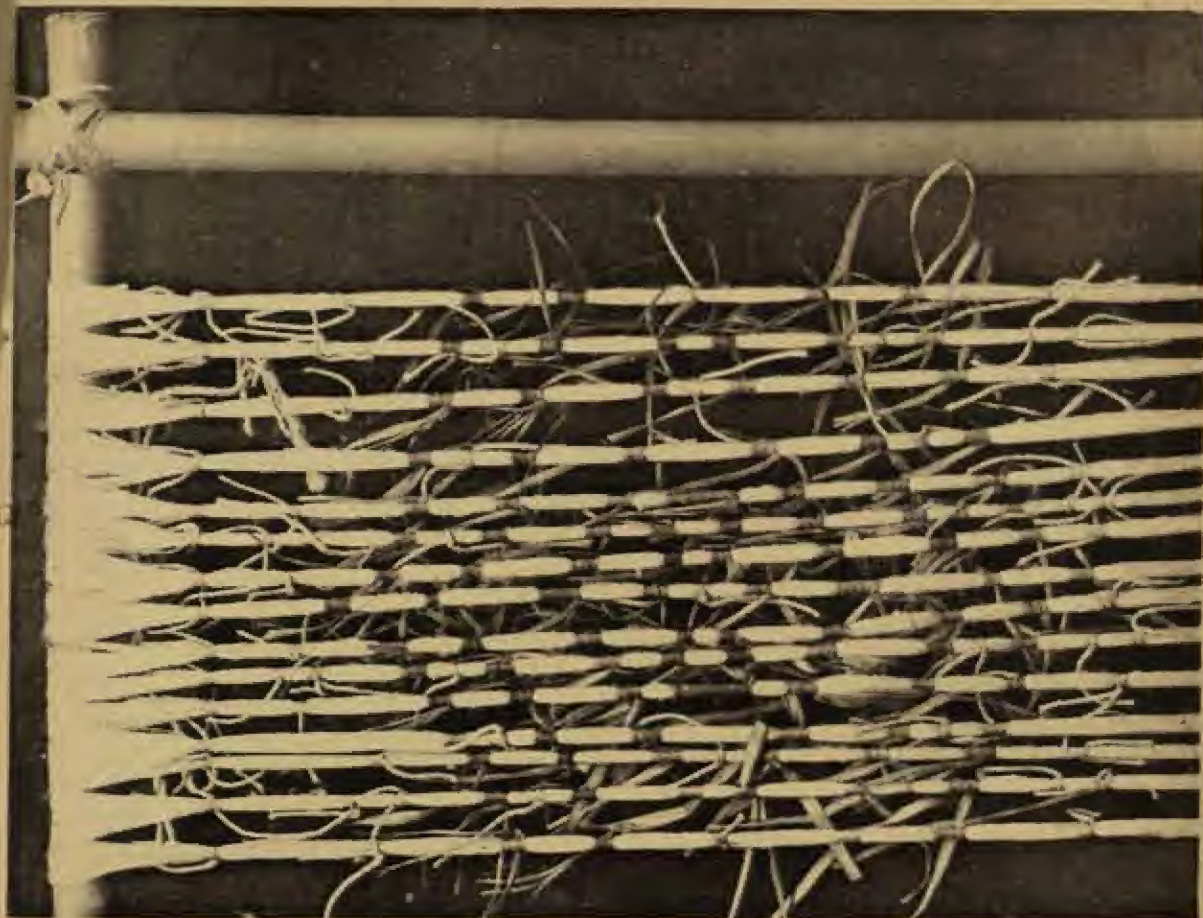
If the pattern is to be, say, white on a coloured ground of, say, red, the parts of the warp which are to be white are covered up previous to dyeing so that they are protected in those places from the action of the pigment and remain white. When the pattern is a parti-coloured one, the same means are employed, but all except the ground colour is covered up in the first instance. The whole is then put into the dye for the ground colour. Then, all that is to be, say, yellow is uncovered and the yellow dye is applied to those parts, then the blue parts are uncovered and dyed, and so on. Lastly, the covering is removed from the white parts, and the thread is ready for the loom. To do all this well, demands a great amount of work, of a most difficult nature when intricate patterns are to be produced, but the results are often very beautiful, and considering the amount of time and skill involved in the manufacture, the cloths are by no means dear at the price locally asked for them.

The method of carrying out the work is as follows:—A frame is constructed of four pieces of bamboo of rather greater length than the length of the cloth it is intended to make. The bamboos are tied together with rattan or string, so that

the frame can be taken to pieces easily. The silk is then wound on to this frame till there is judged to be sufficient for the warp of the intended cloth. It is then separated into distinct bundles of perhaps one hundred threads each, and these bundles are tied at either end of the frame. The number of bundles of thread is determined by the width of the cloth to be woven, and as about fifty threads go to the inch and five threads from each bundle are taken, it requires ten bundles per inch of width. Where a strip of the same pattern is repeated in the design, larger bundles of thread are required for that portion than when it only occurs once. The bundles of thread having been arranged on the frame, the covering up with waxed thread for the narrow bands of colour and with strips of banana stem for the broad bands is begun. The patterns are not drawn, but are made up by the unaided eye on the frame. The thread or banana stem is bound tightly round the bundles of silk and is tied with what is known as an upholsterer's knot. In Pl. XI, Fig. 1, is shown a portion of a frame with the bundles of silk-thread on it and the waxed threads and banana stem strips in place ready for dyeing. The tying is a very long and tedious process, as may be imagined. As before mentioned everything except the portions of the silk threads which are to form the ground is covered in the first instance. Two strings are then threaded through the loops of the bundles along the side of the bamboos, so that the position of the bundles may remain the same during the process of dyeing. The bamboo frame is then untied and the silk removed from it. Almost invariably the ground is red and this is produced by lac. Stick-lac is pounded up and soaked in water for two days and then boiled. The silk is dipped into this solution and the colour is fixed by subsequent immersion in a solution of alum in water, and the acid juice of the fruit of the Glugor (*Garcinia atrovirdis*). The same mordant is used with all the other dye substances employed in this work. When the ground is finished the bundles of silk are rearranged as before on the bamboo frame. Then all the parts which are to be yellow are uncovered. These are then dyed by the local application of the yellow dye. For this purpose chips of a wood called Kadrang (probably *Cryptocarya impressa*) are treated in the same way as the lac. Turmeric (*Curcuma longa*) is sometimes substituted for Kadrang to produce yellow. The other colours of the pattern are dyed successively in the same way, until the whole are finished, then the covering is removed from the white portions. The green and blue dyes are purchased locally from the Chinese shops.

The whole of the bundles having been dyed, the silk for the warp is put into the loom, five threads from each bundle being taken and carefully arranged in the comb of the loom so that the whole pattern looks correct. The woof thread is of the colour of the ground, but here and there a stripe of some other coloured thread may be introduced.

The following details will give some idea of the arrangement of the patterns in one cloth which I carefully examined. This cloth was what is called a Sarong, that is a sort of skirt worn by Malays of both sexes. The ground colour was red, and there were also in it white, black, blue, green, and yellow in the warp, with



Warp-threads on frame, showing method of tying preparatory to dyeing



A silk sarong in the collection of the Perak Museum

gold thread at intervals in the woof, which was otherwise red like the ground. The patterns were mostly more or less diamond shaped, and to produce them one hundred and twenty differently dyed bundles of threads had been employed. There were four different stripes of patterns. The bulk of the cloth was made up of a narrow pattern of ten differently dyed threads separated by a streak of yellow, then there was a broad strip of fifty, a narrower one of thirty-six, and another of twenty-four differently coloured threads. The narrowest pattern was about 1 inch in width and the broadest about 5 inches. The woof was red and at intervals of about $1\frac{1}{2}$ inches a single gold thread was inserted. This cloth, which was about 4 feet wide by 7 feet long, I was informed by the maker, had taken two months to dye and weave, and the price asked for it was \$20, which is about thirty-six shillings in English money.

The effect of these cloths is very charming and harmonious, and a great deal of their beauty is undoubtedly due to the woof being of the ground-colour, so that each portion of the pattern is mixed with this colour and all crudity of colouring is thereby prevented. I sent several of these cloths to the Indian and Colonial Exhibition in 1886, and their harmonious colouring and artistic excellence was much admired by the late Sir Frederick Leighton.

In the example just described only single threads of gold were interwoven with it, but many cloths are profusely decorated with gold. This is done during the weaving, in the following way:—If a part of the cloth is to have roses at regular intervals arranged in *quincunx* order, and there are to be ten of the rows across the cloth, five little bobbins, made up of two small slips of bamboo tied together in the form of a cross, wound with gold thread, would be required, one for each two rows. The flowers are put in as the weaving proceeds, and the five threads are carried in zigzag lines from flower to flower at the back of the cloth. In this work the back of the cloth is always upwards in the loom. Sometimes the cloth to be enriched with gold is of an uniform colour, but more often it is covered with patterns produced by the parti-coloured dyeing of the warp already described, in which case the gold forms a part of the general design.

[NOTE.—Several accounts of the processes of dyeing and weaving in Sarawak will be found in "The Natives of Sarawak and British North Borneo," by H. Ling Roth (vol. ii, p. 29). The dyeing of the Sea Dyak textiles is described by Dr. A. C. Hadden, in the Bradford Report of the British Association (1900, p. 901). These processes are similar to that described by Mr. Wray.—Ed. J.A.I.]

THE *GOURA*, A STRINGED-WIND MUSICAL INSTRUMENT OF THE BUSHMEN AND HOTTENTOTS.

BY HENRY BALFOUR, M.A., F.Z.S.

[PRESENTED APRIL 29TH, 1902. WITH PLATES XII-XIV.]

ONE of the most interesting and, at the same time, most puzzling of the numerous musical instruments of rude and primitive form which still survive at the present day, is the *goura* of the Bushman and Hottentot peoples of South Africa. Rude though it is, it deserves a careful study, for, by reason of the peculiar manner in which its sound is produced, and the limited area of its distribution, it stands almost alone amongst musical instruments. If an accurate study is to be made of the *goura* in its native home there is no time to be lost, since it is rapidly disappearing and becoming obsolete. This is due in part to the extinction, as in the case of the Bushmen, of the people to whom it peculiarly belongs, and in part to its being ousted by the introduction and adoption of other instruments, which have succeeded largely in alienating the affections of the natives from the instruments indigenous to the races. A notably successful invader has been the ordinary European jews-harp which, it would appear, has been widely accepted as an excellent substitute for the *goura*. The conveniently small size, cheapness, and greater musical potentialities of the jews-harp are qualities before which the *goura*, with its many limitations, is rapidly succumbing.

Much confusion has been created by writers upon African musical instruments, who, taking merely superficial resemblances into account, have identified this instrument too freely with the more primitive forms of the very widely distributed group of Musical Bows, a group with which I have dealt at length elsewhere.¹ This confusion can only tend to obscure the true nature and affinities of the instrument, and I hope that, by drawing attention in this paper to what I believe are misconceptions regarding this instrument, I may be able to render more clear its real position. In general appearance the *goura* is undeniably closely similar to the simpler forms of "musical bows," but even though we may be justified in regarding it as more or less related to the latter, its special feature is so peculiarly its own that it seems wiser for the present to assume that the relationship is a distant one, and to treat it apart from that family of instruments, from which it presents so marked a divergence. Its origin and affinities are very obscure and

¹ H. Balfour, *The Natural History of the Musical Bow, a Chapter in the Developmental History of Stringed Instruments of Music*. Clarendon Press, Oxford, 1899.

the stages in its evolution are not, so far as I am aware, to be found in Africa, full though that continent is of primitive survivals, whereby, as in the case of the musical bows and their derivatives, phylogenies may be reconstructed. The *goura*, in fact, in its present form exists as an isolated type, isolated as the races themselves to which it peculiarly belongs. The varieties under which it occurs are very few in number. It is peculiar to South Africa, where it is especially associated with the Bushman and Hottentot peoples, though it has also been adopted more or less by the Basuto and Kaffirs.

I shall refer later in my paper to certain groups of instruments in other parts of the world, which present somewhat striking analogies in regard to the method by which their notes are produced. But, first of all, I will describe the instrument, and quote the descriptions given by various travellers whose information is first hand. I have thought it well to bring together all such descriptions as I have come across, as a possible aid to any future investigator.

NATIVE NAMES.—The native name of the instrument is variously given as *goura*, *gowra*, *goorra*, *gurah*, *geurra*, *georra*, *gora*, *goráh*, *gorrah*, *l'Gorrah*, *l'goorra*, *korá* and the names *gom gom* and *joum joum* have also been associated with it, while *l'ha* (the *l* representing a click) is given in one instance. These names appear in the descriptions quoted below.

FORM.—The essential characteristics of the *goura* will be seen from a typical example of the Bushman instrument in the Pitt Rivers Museum at Oxford (Pl. XII, 1, and Fig. 1a). This was presented to the Ashmolean Museum by Captain H. F. de Lisle in the year 1827, and consists of a thin, tapering bow of light wood, 3 feet 10 inches long; the string is fine and at one end is fixed to the thin end of the bow, and at the other end through a small hole in a little blade, made from a quill of feather (Fig. 1a), split and flattened out, and having this size and shape. The quill is furnished with a long tail, by means of which it is



FIG. 1a.—QUILL BLADE OF THE *goura* NOW IN THE PITT RIVERS MUSEUM AT OXFORD.

sinews, at a point about $4\frac{1}{2}$ inches from the thicker or butt end. The specimen figured by the Rev. J. G. Wood¹ is very similar to the above described, though the quill blade is wider and more fusiform in outline (Pl. XII, 2). The Basuto examples which I have seen differ in having a very stout and almost straight bow, which is either of bamboo or wood, and in the quill being fixed in a split wooden peg, which fits into a hole in the butt end of the bow (Pl. XII, 3a, and 3b). Basuto examples exist in the British Museum and Kircherian Museum in Rome.

DESCRIPTIONS GIVEN BY VARIOUS OBSERVERS.

KOLBE.—The earliest account of the *goura* to which I have reference, is the well-known description by Peter Kolbe, who was travelling in 1704, and I quote

¹ *Nat. Hist. Man*, i, p. 294.

the passage from the English translation of the original high German text¹ (Plate XIII, 9). "One of the Hottentot Instruments of musick is common to several *Negro* nations, and is call'd both by Negroes and Hottentots, *gom gom*. But whether the Negroes owe it to the Hottentots, or the Hottentots to the Negroes, I cannot say. The *Gom Gom* is a bow, of Iron- or Olive wood, strung with twisted Sheep-Gut or Sinews. On the String, quite up at one End of the Bow they fix, when they play, the barrel of a Quill slit, by putting the String into the Slit, so that it runs quite through the Barrel. This Quill, so fixed on the String, they apply, when they play on this Instrument, to their Mouths, much in the same manner as is done to play on the *Jews-Harp*; and the various Notes of the *Gom Gom* are owing, as are the Notes of the *Jews Harp*, to the various modulations of the Breath. This is the lesser *Gom Gom*. The Grand *Gom Gom* is made by putting on the string, before they fix it to the bow, a Cocoa Nut Shell, about a third Part saw'd off, so that it hangs like a cup the mouth upwards, the string running through Two holes nigh the Brims. When they play on the Grand *Gom Gom*, with one hand they hold the bow, the Quill on the String applied to their Mouths; and with the other they move the shell nearer or farther from the Quill, according as they would vary the Sound, which rises or falls according to the Motions of the Shell. The Shell before it is put on, is clear'd of all Scurf and loose Hairs, and made very neat and smooth.

"When three or four of those *Gom Goms* are play'd upon in concert by skilful Hands, I must confess I think the Harmony extremely agreeable, especially when it runs in the low Notes, for there is a Softness in the Musick that certainly has Charms for a very delicate Ear. Hearing once the Musick of the *Gom Gom* in the Dead of the Night, I was so struck with the Delicacy of it, that it won my whole Attention, and I could not help thinking that the Instruments were play'd by some ingenious *Europeans*, who had studied themselves up to the highest Perfection upon 'em. Having a Mind to be satisfied, I stepped to the Place from whence the Musick came, and was surpris'd to find that the Musicians were only Two Hottentots who indeed performed to Admiration. The Reader may think of my Taste for Musick as he pleases, but I cannot help declaring it as my opinion, that the *Gom Gom*, as insignificant a Piece of Work as it is, was it to be studied by a judicious European Musician, would be found to have as fine Musick in it as any instrument we have, and be as much admired."

In this account, written nearly two centuries ago, the writer's enthusiastic appreciation of the musical qualities of the instrument are noteworthy, and, judging by other accounts, he must certainly have been fortunate in meeting performers of exceptional merit. His description of the "*great gom gom*" is, I believe, unique, no other writer having noticed the ingenious contrivance for lengthening and shortening the vibrating portion of the string by means of a sliding cocoanut shell. Were it not for the detailed nature of his description and

¹ P. Kolbe, *Cape of Good Hope*. Translated by G. Medley. Lond., 1731, p. 271 and plate.

figure of the instrument (Pl. XIII, 9), one might have been led to suppose that Kolbe had, as so many writers have done, confused the ordinary musical bow, with gourd or cocoanut resonator, with the *goura*, or *gom gom* as he calls it. As it is, this form which he describes is not outside the range of possibility. The *goura* is rapidly disappearing, and the "great *gom gom*" may have been one of the first forms to become extinct. It would be well to seek traces of it amongst the Hottentots, and, if any remain, to secure examples without delay.

SPARRMAN.—Nearly three-quarters of a century later Andrew Sparrmann saw the *goura* in use among the Hottentots in Riet Valley, Zwellingdam, north-east of Cape Agulhas, and described it as follows:—¹

"One of their instruments is a bow, like a springe bow, a foot in length, with a fine string of thread, to the end of which there is fixed in the same line a cloven quill half an inch long. The instrument is played on in the following manner: the musician, applying his mouth to the quill, draws in his breath very hard, so as to put it into a quivering motion, which produces a grating sound. This instrument is called a *t'Goerra*, a name which seems to be applicable enough to it, as tolerably well corresponding with the sound of the instrument." The extreme shortness of the bow is worthy of remark in this description.

THUNBERG.—The Swedish botanist, C. P. Thunberg, travelling in Caffraria in 1773, saw in use among the Hottentots "a kind of an instrument called *Korà*," and says, "It resembles at first sight a fiddle-stick, and was made of a wooden stick, over which was extended a string. At the end of this was fastened the tip of a quill, and upon this they played with their lips, blowing as if it were a wind instrument, so as to make it produce a jarring sound."²

DE VAILLANT.—A little later is the account given by De Vaillant of the *goura* among the Gonaquai Hottentots. He says: ³ "The *goura* has the form of the Hottentot bow, and is about the same size. They tie a cord, made of the entrails of some animal, to one of the extremities, the other end of it is fastened by a knot in the quill of a feather, which is slit and flattened. This feather, when spread, forms an isoscele triangle, which may be about two inches long. It is at the base of this triangle that the hole is made that retains the cord, and the point of the quill being folded back, is fastened by a small thong to the other end of the bow. This cord may be more or less tightened according to the will of the musician; but when several *gouras* are played together, they contrive never to have them in unison with each other. This would never be thought a wind instrument from its appearance, though it certainly is one. . . . While playing on it, it is held much in the manner of the hunting horn, the end of the bow where the feather is placed being applied to the mouth; and both in aspirating and

¹ Sparrmann, *Voyage to the Cape of Good Hope*, 1772-6. Lond., 1785, i, pp. 228-9.

² Thunberg, *Account of the Cape of Good Hope*, 1795. Pinkerton's *Voyages and Travels*, 1815, vol. xvi, p. 102.

³ Vaillant, *Travels from the Cape of Good Hope into the Interior of Africa*, 1781, translation. Lond., 1790, ii, p. 125 and plate opposite p. 2.

drawing his breath, the player produces a sound which is tolerably melodious; but even the savages, who succeed the best with it, never play any regular tune. The best feathers for this purpose are taken from the wings of the bustard; when I happened to kill one of these, I always took care to supply our orchestra with a number of them. The goura is called by a different name when played on by a woman. It then acquires the title of a *joum-joum*. Seated on the ground she places it perpendicularly before her, in the manner of a harp; the bottom of it is held by passing one of her feet between the bow and the cord, observing not to touch the latter; with her left hand she grasps the middle of the bow, and while she blows upon the feather, strikes the string with a little wand, of about five or six inches long, which she has in her other hand and which produces some variety in the modulation; but the ear must be at no great distance from the instrument to mark distinctly the gradation of its sounds. This manner of holding the goura produces a very good effect, and gives a grace to the Hottentot who plays upon it."

Vaillant's figure of the instrument, which I reproduce (Pl. XII, 4), corresponds with his description and shows the triangular shape of the quill. His account of the difference in the manner of playing upon the instrument adopted by the two sexes is curious, as also the fact of the instrument being called *goura* when played upon by a man, and *joum-joum* (a name reminding one of Kolbe's *gom gom*) when in the hands of a woman. The usual method of sounding the ordinary "musical bow," by means of a small stick by which the string is struck, appears to be added by the women to the blowing method characteristic of the instrument. The effect of these two methods acting simultaneously is difficult to imagine.

BARROW.—John Barrow (1796) describes¹ the Hottentot *goura* seen by him at Graaf Reynet as consisting of a "piece of sinew or intestine twisted into a small cord, and fastened to a hollow stick about three feet in length, at one end to a small peg, which, by turning, brings the string to the proper degree of tension, and at the other to a piece of quill fixed into the stick. The tones of this instrument are produced by applying the mouth to the quill, and are varied according as the vibratory motion is given to the quill and string by inspiration or expiration. It sounds like the faint murmurs of distant music that 'comes o'er the ear' without any distinction of notes." And this instrument is called the *gowra*." This is the first mention of the addition of a tuning-peg to the instrument. It seems likely that this idea of adding the peg was suggested by some other instrument not of Hottentot origin.

LICHTENSTEIN.—An interesting description of the *goura*, with details as to the notes which can be produced upon it, is given by H. Lichtenstein² (1803-6), who, in referring to some Hottentots, writes: "The bridegroom was perfect master of

¹ Barrow, *Travels in South Africa*, 1796, second edition, Lond., 1806, i, p. 98. This account is reproduced verbatim in George Barrington's *Voyage to New South Wales*, Lond., 1810, i, p. 189; though Barrow's name is not mentioned.

² Lichtenstein, *Travels in Southern Africa*, 1803-1806, translated, Lond., 1815, by Anne Plumptre, ii, pp. 232, 233.

playing on the *t'Gorrah*, one of the proper musical instruments of the Hottentots one which is not now very often to be met with, and which is seldom well played upon but by old shepherds and herdsmen. It consists of a staff of hard wood somewhat curved, over which is stretched a long catgut string: at the lower end a quill is fastened to it, with a horsehair, and by this only again brought into contact with the staff, so that it is in some sort insulated, and can sound of itself. The person who plays takes the quill in his mouth, and, by blowing stronger or weaker, occasions a vibration of the catgut. The whole has very much the appearance of the bow of a violin; and is, according to the above description, partly a stringed, partly a wind instrument. It is commonly played lying down, and the Hottentots seem scarcely able to play but amid the tranquility of night. They wrap themselves up comfortably in their skin, lay one ear to the ground, and hold the *t'Gorrah* commodiously before the mouth. . . . Heard at a distance there is nothing unpleasant in it, but something plaintive and soothing. Although no more than six tones can be produced from it, which do not besides belong to our gamut, but form intervals quite foreign to it, yet the kind of vocal sound of these tones, the uncommon nature of the rhythm, and even the oddness, I may say wildness, of the harmony, gives to this music a charm peculiar to itself. . . . Between the principal tones and the octave lie only three intervals: the first is at least somewhat deeper than our great third: the second lies in the middle, between the little and great fifth; and the third between the great sixth and little seventh; so that a person might imagine he heard the modulation first in the smallest seventh accord. Yet every one lies higher in proportion to the principal tones; the ear feels less the desire of breaking off in the pure triple sound; it is even more satisfied without it. Practised players continue to draw out the second, sometimes even the third, interval, in the higher octave. Still these high tones are somewhat broken, and seldom pure octaves of the corresponding deep tones. Melodies, properly speaking, are never to be heard; it is only a change of the same tones, long protracted, the principal tone being struck before every one."

Apart from his interesting details regarding the musical capacity of the *goura*, Lichtenstein's account is significant in its indication of the fact that even so early as the beginning of last century, this instrument was beginning to die out among the Hottentots, and that it was only the *older* men who performed with any real skill. This deterioration in the skill in playing upon the *goura*, may perhaps account for the steady falling off in the enthusiasm inspired in successive travellers by its music. The verdicts of actual observers range from the earliest, and by far the most enthusiastic appreciation by Kolbe, through a chronological series of accounts in which the eulogies suffer successive depreciation, until in some of the later accounts the "music" of "this terrible instrument" is likened to the braying of an ass, or "the sound drawn from a clarionet by a novice!"

BURCHELL.—The illustration (Pl. XIII, 10) of a Bushman playing upon the *goura*, by William Burchell (1810-1812), is practically the only good drawing of a

performer made by an actual observer on the spot, and his description also is a good one. His account¹ runs as follows :

"The *Gorák*, as to its appearance and form, may be more aptly compared to the bow of a violin, than to any other thing; but in its principle and use, it is quite different; being in fact that of a stringed and wind instrument combined, and thus it agrees with the *Æolian* harp. But with respect to the principle on which its different tones are produced, it may be classed with the trumpet or French horn; while in the nature and quality of the sound which it gives, at least in the hands of one who is master of it, this strange instrument approaches to the violin. It consists merely of a slender stick or bow, on which a string of catgut is strained. But to the lower end of this string, a flat piece of about $1\frac{1}{2}$ inches long, of the quill of an ostrich, is attached, so as to constitute a part of the length of the string. This quill being applied to the lips, is made to vibrate by strong inspirations and expirations of the breath; each of which ending with an increased degree of strength had always the same effect of forcing out the upper octave; exactly in the same way as produced in the flute, an instrument, therefore, which may be made to imitate the *gorák* sufficiently near to give some idea of it. The old musician seating himself down on a flat piece of rock, and resting his elbows on his knees, putting one forefinger into his ear, and the other into his wide nostril, either as it so happened, or for the purpose, it might be, of keeping the head steady, commenced his solo, and continued it with great earnestness, over and over again. The exertion which it required to bring out the tones loudly was very evident; and, in his anxious haste to draw breath at every note, our Orpheus gave us, into the bargain, intermingled with his music, certain grunting sounds which would have highly pleased the pigs; and if any had been in the country, would indubitably have drawn them all round him, if only out of curiosity to know what was the matter. In the meantime I was not less employed than he, being obliged to exercise two faculties at the same time, one to listen to and learn the notes he was playing, so as to enable me to write them down correctly, the other to draw his figure and portrait. The accompanying plate presents a likeness of him and is a copy of the drawing made on the spot. Beneath are added the notes expressed in the manner in which they were played, or at least as they sounded to my ear; although I find a difficulty in conceiving how an instrument, giving its tones on the principle above described, can produce either the *tonum majus* or the *heptachordon*. The crotchets of that part which is in triple time, were exactly of the same length as those in the common time preceding and following, consequently the time reckoned by bars, was there accelerated. The whole piece played once through occupied just seventy seconds, and was repeated without variations. There is sufficient in these few notes, to show that he possessed an ear capable of distinguishing musical intervals, and they are besides remarkable under all circumstances as a specimen of natural modulation."

¹ Burchell, *Travels in the Interior of South Africa*, 1810-1812. Lond. 1822, i, p. 458 and coloured plate. The locality was Klaarwater, c. 29° S. 24° E., in the Koranna region.

Burchell's description may probably be regarded as one of the most accurate of the accounts. He evidently was at some pains to observe both the instrument and the performance in detail. He makes it clear that the player could accurately repeat his series of bars, and although this music may not appeal to us as melody, at any rate to the native the idea of a definite tune was there, consisting of a short theme which could be repeated over and over again *ad libitum*. There was no taking the notes as they came, and it is evident that the performer exercised a real control over his difficult instrument.

MOODIE.—Lieutenant J. W. D. Moodie (1819–1829), describing the *goura* amongst the Hottentots, says,¹ "This curious instrument is formed by stretching a piece of the twisted entrails of a sheep along a thin stick about 3 feet in length, in the manner of a bow and string. At one end, the string is tied simply to the extremity of the stick; but at the other, it is fixed to a piece of flattened quill about an inch in length, cut in an oval shape to suit the opening of the lips. The other end of this piece of quill is then secured by a short bit of string to the opposite end of the stick, so that it is strained in a line with the string with the flat side outwards. The instrument is played upon by introducing the quill between the lips, and blowing in a particular way, holding the stick in a horizontal position. The peculiarity of the *gorah* is that it naturally runs into the notes of the common bugle, which it also resembles in sound."

MOFFAT.—The missionary, Robert Moffat, saw the *goura* in use among the Bushmen. He writes,² "The *gorah* is an instrument something like the bow of a violin, rather more curved, along which is stretched a cat-gut, to which is attached a small piece of quill. The player takes the quill in his mouth, and by strong inspirations and respirations of breath, produces a few soft notes in the vibrations of the cat-gut."

The above two accounts do not differ materially, in the details which they give, from some of the descriptions which precede them.

BARTLE FRERE.—A letter from the Right Hon. Sir Bartle Frere, Bart., to his friend, the late Sir Henry Acland, of Oxford, dated March 31, 1878, refers to a *goura* forwarded by him for the Oxford Museum. The instrument itself has, I regret to say, not been forthcoming, and is presumably lost, but the letter has been handed over to me by Mr. H. D. Acland, and I quote from it:

"The *t'há* (a bow with a small piece of quill attached to one end of the string) is played by Bushman men and youths only. The player applies his lips to the piece of quill, and draws his breath inwards through it. The *t'há* figures in the native literature of the Bushmen. For instance, a young man playing it, is changed into a tree by the glance of a maiden, etc. The quill is from a Korhaan's feather. This piece of wood happens to be *œstrum* (?) wood. The string is not touched . . . The vibrations on the string make a faint sound—the other sounds are made in the throat."

¹ Moodie, *Ten Years in South Africa*, 1819–1829. Lond., 1835, i, p. 225.

² Moffat, *Missionary Labours and Scenes in South Africa*, 1842, p. 58.

The name given here is peculiar, consisting of the syllable *hā* with a "click" in front of it. The writer, unfortunately, does not mention the district in which he found this instrument. His mention of the performance being restricted to males presumably applies to certain districts only, as women players are mentioned in some of the foregoing accounts. That the *goura* figures in Bushman legends is interesting, as pointing perhaps towards the antiquity of the instrument, though of this nothing certain can be said.

The accounts which I have quoted so far have dealt with the *goura* amongst the Bushman and Hottentot peoples, the Koi Koin stock, exclusively, though it must be admitted that the term "Hottentot" may possibly have been loosely used in one or two cases, and there may be instances where the term as used should not necessarily be taken to imply Hottentot in the strictly ethnological sense. The name *may* have been correctly used in all cases, but there is no absolute guarantee. At any rate it is clear that the *goura* is a very characteristic instrument amongst the Koi Koin peoples, and there appears to be every likelihood of its presence in South Africa being due to its introduction by these people, whose national instrument it was, and it seems most probable that, where we find it in use among tribes of Bantu stock, the latter borrowed the instrument from either Bushmen or Hottentots.

That the Bantu tribes also favour the instrument to some extent is clear from the following references to travellers' accounts, and probably Kolbe in referring to *Negroes* as well as Hottentots, in the account of the "*gom gom*" which I have quoted, was including tribes of Bantu origin. I have already referred to Basuto specimens (Pl. XII, 3, 3*a*, and 3*b*).

CAMPBELL.—John Campbell (1812–1814) mentions¹ that, among the "Caffre" musical instruments, "one is a bow with a piece of quill fixed near one end of the string, on which they blow, which makes an agreeable sound." This would appear to refer to the Caffrarian population between the Great Fish River, east of Algoa Bay, and the River Bassee to the north, between, say, 34°–30° S.

The Caffrarian instrument described by the Rev. F. Fleming,² under the name "*gorrah*" is, from his description, clearly not an instrument of the *goura* class, but one belonging rather to the primitive zither class.

CASALIS.—The *lesiba* of the Basuto, which is similar in all its essentials to the *goura*, is described thus by the Rev. E. Casalis.³ "A cord, resembling the string of a violin, is stretched along a short bamboo, which is slightly curved. This cord has at one end a piece of quill, slit in two lengthways, and flattened. The performer places the end to which the quill is fastened between his half closed fingers and the palm of his hand, then placing his lips upon his fingers thus arranged, he draws in the air pretty strongly, which causes the quill and the cord

¹ Campbell, *Travels in South Africa*, 1812–1814, published 1815, p. 519.

² Fleming, *Southern Africa*, Lond., 1856, p. 225.

³ Casalis, *The Basutos*. Lond., 1861, p. 143.

to vibrate; a shrill nasal sound is produced, not unlike those drawn from a clarinet by a novice."

In this account it would appear that the hand is used in some way as a guide with which to direct the current of air.

WIDDICOMBE.—The Rev. J. Widdicombe¹ also describes the Basuto *lesiba* in very similar terms, and adds, "The instrument is usually played by a boy, who draws with his lips a series of sharp, shrill, nasal sounds from the vibrating string and quill, which would be nothing less than an utter terror to anyone possessed of 'nerves.'"

MONTEIRO.—After describing some "musical bows" among the "Kaffirs" of the Delagoa Bay district, R. Monteiro² writes: "The third instrument is a piece of thick cane three-quarters of an inch in diameter and three feet long, having a fine string made of the twisted hairs from an ox-tail stretched along its entire length, but not touching the cane. At one end of the string a flat piece of quill an inch long is tied, and the lips being placed on this and the breath sucked in and out seemingly by a great effort, a loud and appalling noise is produced, best represented as follows:—



and more resembling the hee-haw of a donkey than anything else."

FRIJSCH.—Gustave Fritsch³ mentions the instrument (whose name he variously spells *gcurra*, *georra*, *goorra*, while he also mentions the name *lesiba*) as used by the Bechuanas, and adds that it has been accepted by almost all tribes in South Africa, though it is especially characteristic of the Koi Koin. He does not speak well of the instrument, which he refers to as "this terrible instrument," which is played upon "in a way to shake one's nerves" (this in reference to the Bushmen). In mentioning its use among the Hottentots he states that the vibrations of the string are modulated, either by the fingers or by a little stick.

That the Bantu races adopted the *goura* from the Koi Koin is, as I have said, more than probable. The Basuto, when first they arrived in what is now known in Basutoland, found the Bushmen already occupying the territory, and although they carried out a policy of extermination in the case of the men, the women and young girls were captured and retained as wives of the invaders,⁴ and it is easy to see how some of the Bushman customs came to be adopted amongst the Basuto and the half-breed offspring. The same thing has happened with other sections of the Bantu stock, and the *goura* has been adopted from either Bushmen or Hottentots in a natural way.

I have thought it advisable to quote at length the various authentic accounts,

¹ Widdicombe, *Fourteen Years in Basutoland*, 1891, p. 58.

² Monteiro, *Delagoa Bay*, 1891, p. 252.

³ Fritsch, *Die Eingeborenen Süd Afrikas*, Breslau. 1872, pp. 190, 327, 427, 439.

⁴ Widdicombe, *op. cit.*, p. 14.

as they mostly differ more or less in matters of detail, or in the manner of describing the instrument, and a better conception of it can be obtained by reading the whole of the accounts, and deriving from them a kind of composite mental picture; and, moreover, it may be convenient to other students to have the literature of the subject collected together. There are, no doubt, several accounts which I have not as yet succeeded in seeing, but I trust that my list is not *very* incomplete.

THE GOURA AND THE MUSICAL BOW.

One of my main objects in writing this paper has been to draw attention to the essential difference between the *goura* and the more primitive forms of the "musical bow," and I am the more anxious to emphasize the importance of carefully discriminating between the *goura*, in which the string is thrown into vibration through the medium of a piece of quill, which is caused to oscillate by being blown upon, and the *musical bows*, in which the vibration is caused by tapping or plucking the string itself, by reason of the fact that even the most recent writers upon African musical instruments persist in confusing the two types of instruments. Dr. Frobenius, for instance, in his recent interesting work¹ on African Culture, speaks of the "*gubo-gora*" as though the two types formed one class. He tells us that the *gora* is much in use in the Kamerun district, in the form of the Bakwiri *mundinde*; but the latter instrument is merely a variety of the simple resonator-less musical bow, as his own description amply shows, and he makes this doubly obvious by likening the *mundinde* to the bow-instrument of the Bubi of Fernando Po, and to the *bentwa* of Ashanti, both of which are "musical bows" pure and simple. Dr. Frobenius has, I venture to think, fallen into a very common error, having been misled by the fact of these resonator-less bows being usually held to the mouth when they are played upon, as is, of course, the *goura*; but he overlooks the very different reasons for this in the two cases. In the case of the *mundinde*, *bentwa*, and, in fact, nearly all simple "musical bows" which have no resonating body attached to them, both in and out of Africa, the mouth is merely acting as a resonator, one end, or the middle of the bow, being usually held by the performer against his teeth, with the object and the result of greatly increasing the volume of sound for his own benefit, as any one can easily see by experiment (Pl. XIV, 11, 12, 13, 14). I have myself watched a Natal Kaffir playing in this manner upon a simple bow instrument, and in this, as I believe in all other instances, the vibration was caused by plucking the strings with the fingers (in many cases it is effected by tapping with a stick), and it is not the breath which throws the strings into vibration. The performer, holding the instrument to his mouth, undoubtedly breathes upon the string, he cannot very well help doing so; but this is not in order to make the string sound, and I doubt whether blowing upon a small portion of the string of a musical bow would have sufficient effect in causing vibration, for we must remember that even when the quill of the *goura* is

¹ Frobenius, *Der Ursprung der Kultur*. Berlin, 1898, i, pp. 120-123.

added to the string, the operation, thus very materially assisted, is very hard work, and far from easy, as may be seen from the descriptions. I think that it may fairly be laid down that in the "musical bows" the mouth is used to *increase* the sound and not to *produce* it.¹ With the *goura*, on the other hand, the opposite is the case, the vibration of the string being distinctly *caused* by the force of the breath acting upon the quill and causing this to oscillate rapidly and violently. The distinction is very marked.

Another very recent writer, Dr. Ankermann, has, in a paper of great interest and importance,² also somewhat confused the two distinct types. Although in one place (p. 7) he points out that the construction of the *goura* is "not only different, but the principle is also quite different to that of the ordinary musical bow," he in another page (p. 77) states that "the bow of the Bimbia corresponds, at least in the manner of its use, to the *gorra*, in which the string taken between the teeth is blown upon, and at the same time is beaten with a little stick. This is also the case with the 'to,' the so-called musical bow of the lower Niger . . ." Now the Bimbia bow, described by Allen and Thomson, and the "*to*," discovered by Mockler Ferryman, are both instruments similar to the *mundinde* and *bentwa* and the Bubi bow (PL XIV, 11) referred to above, and I have already given my reason for separating these sharply from the *goura* class. The same writer (on p. 114) after describing, as I think quite correctly, the manner of playing upon the musical bow, and the part which the mouth plays in acting as a resonator of a variable capacity, goes on to make a statement which exactly contradicts what he had just said. The passage runs thus: "The sound is produced in the musical bow by the touching of the string with a little stick or plectrum. As the tone is very soft, a gourd, or the hollow of the player's mouth, serves to strengthen it, and the tone is modified by the opening or the closing of the aperture of the mouth or gourd." This appears to me to be quite correct, but he continues: "The inhaling or the exhaling of the breath causes a current of air, which brings the sound from the string, and the bow now becomes a jews-harp: the string is breathed upon and the tone is modified with a little stick or with the fingers." We are, in fact, in a single passage, asked to believe, on the one hand, that the vibration is caused by the stick striking the string, while the notes are varied by the mouth, and, on the other hand, that the vibration is caused by the breath, and the notes varied with the stick. It is indeed difficult to harmonize two such conflicting statements.

In order to illustrate how widely distributed is this method of playing upon

¹ It is conceivable that the force of the breath may act to some extent in producing variations in the notes emitted by a string already vibrating, but of this I do not feel certain, some of the descriptions would lead one to suppose that this was the case. The cavity of the mouth can be varied and variations in the notes may be caused in this manner, just as is done in the case of the jews-harps.

² Ankermann, "Die Afrikanischen Musikinstrumente," *Ethnol. Notizblatt, Kgl. Mus. f. Völkerkunde*. Berlin, 1901, vol. iii, part I, pp. 7, 77, 114.

the simpler forms of "musical bow"—by placing the bow against the teeth in order to give increased resonance—I have given two examples (Pl. XIV, 13 and 14) which are not African. One of these (Pl. XIV, 13) is from a photograph of a boy of New Britain in the South Pacific, playing in this manner upon the *pangolo*, which is a simple bow-like instrument which differs from the African examples above mentioned only in having two strings instead of one. The method of playing is identical. The other example (Pl. XIV, 14) is from Western Patagonia and was observed by Dr. H. ten Kate. The young man, of mixed Tehuelche and Araucanian blood, is performing upon the *koh'-lo*, holding the end of the bow to his teeth and tapping the string with a stick. In neither of these cases is the string caused to vibrate with the breath.

Occasionally, the string of a "musical bow" is taken between the lips of the performer, as is well shown in a figure by Sir H. H. Johnston¹ of a pigmy of the Semliki Forest, Central Africa. But, even in such cases, the mouth can only act as a resonant cavity, whose capacity is probably varied in order to produce a variety of notes, just as is done in playing upon the jews-harp. The string is set vibrating by plucking it with the fingers, and, judging by a specimen of one of these very bows which is in the British Museum (given by Sir H. H. Johnston) I think it most improbable that the *breath* alone *could* impart vibration to the string, sufficient at least to cause sound. The string is very stout.

We have further evidence, of a more indirect nature, to show that, when applied to the "musical bows," the mouth serves the purpose of a resonator—in the fact that, in the case of those improved forms of "musical bow" to which a resonant body (usually a gourd or coconut shell) has been added, so as to form part of the instrument, the bow is *not* held to the mouth (Pl. XIV, 15). There is no longer any need to do so, since the gourd now takes the place of the mouth, and discharges its resonatorial functions. For details as regards the evolution, varieties and geographical distribution of the "musical bows," I must refer my readers to my monograph on the subject²; my object here is merely to emphasize the distinction which it is essential should be drawn between the "musical bows" on the one hand and the *goura* and its kindred on the other.

THE GOURA AND THE JEWS-HARP.

Some confusion has been also created by writers who have persisted in describing both "musical bows" and *goura* as "a kind of jews-harp," or using some expression which tends to confuse these totally distinct groups of instruments together, and it may be well for me to insert here a word upon this subject. To give a few examples of these confusing statements: Dr. Ankermann in a passage dealing with the "musical bow," which I have already ventured to criticize in another connection, remarks, "und nun wird der Bogen zur Maultrommel."³

¹ *Pall Mall Magazine*, February, 1902, p. 173.

² Balfour, *The Natural History of the Musical Bow*, Clarendon Press, 1899.

³ Ankermann, *op. cit.*, p. 114.

Mr. Theodore Bent¹ describes a "musical bow" seen by him at Zimbabwe, as "a sort of jews-harp." Dr. Richard Wallaschek,² whose book on "Primitive Music" is unfortunately replete with such confusing statements, has followed Capt. C. R. Day in placing the "to" of the Niger territories, which is a simple "musical bow," amongst the jews-harps, and apparently endeavours to bring the "*pangolo*" of New Britain within the same category. This writer also,³ in referring to the "*gurah*" (*goura*), says that its principle is very similar to the jews-harp (*maultrommel*). Again Dr. Gustav Fritsch⁴ speaks of the *goura* as a "kind of jews-harp," and informs us that "the instrument is played in a manner similar to our jews-harp."

Now it seems to me that, if we are hoping to establish a general classification of musical instruments based upon their real affinities, statements such as the above can only tend to obscure rather than throw light upon the subject. The group of instruments known to us under the name of *jews-harp*, to the Germans as *maultrommel*, to the French as *guimbarde*, to the Italians as *spassa pensiere*, and the kindred instruments widely dispersed over Eastern Asia and the Pacific—forms a very distinct and homogeneous class, and I see no reason whatever for believing that there is any morphological connection between the instruments of this group and the "musical bows" or the *goura*. In the jews-harp, the sound is produced by throwing into vibration a tongue of wood, bamboo, or metal, either by plucking the up-turned end of the tongue (if of metal), or by jerks upon a piece of string attached to one end of the instrument (chiefly when it is made of wood or bamboo). A single note is thus produced, and, in order to gain a variety of notes, the instrument is held to the performer's mouth which also performs the function of a resonator. To quote Sir George Grove,⁵ "A column of air may vibrate by reciprocation with a body whose vibrations are isochronous with its own, or when the number of its vibrations are any multiple of those of the original sounding body. On this law depends the explanation of the production of sounds by the jews-harp. The vibration of the tongue itself corresponds with a very low sound; but the cavity of the mouth is capable of various alterations; and when the number of vibrations of the contained volume of air is any multiple of the original vibrations of the tongue, a sound is produced corresponding to the modification of the oral cavity."

Now, one may readily admit that the hollow of the mouth is probably used, in playing upon *some* of the simpler forms of musical bow, for a similar purpose, viz., to cause variations upon the fundamental note of the string. But this identical use of the mouth-cavity in playing upon such totally distinct instruments as the jews-harp and the "musical bow," does not in any way justify us in associating them into a single group, or even of assuming the existence of any actual

¹ Bent, *The Ruined Cities of Mashonaland*, p. 82.

² Wallaschek, *Primitive Music*, 1893, p. 120.

³ Wallaschek, in *Mitt. Anthropol. Gesellschaft in Wien*, xxviii, January, 1898.

⁴ Fritsch, *Eingeborenen Süd Afrikas*, pp. 327 and 439.

⁵ Grove, *Dict. of Music*, ed. 1900, art. "Jew's-harp."

relationship between them, unless we can support the view by evidence based upon morphological affinities; and, hitherto, no such affinities have, I believe, been traced. Cases of *analogy* have frequently tempted the unwary into seeing in them *homologies* which do not exist.

If this similarity in the method of playing upon them has frequently caused the "musical bows" and jews-harps to be regarded as related to one another, upon what grounds have affinities been traced between the jews-harps and the *goura*? Assuredly upon no just grounds. Not only is the form of the *goura* as distinct from that of the jews-harp as is that of the "musical bow," but the method by which the sound is both produced and varied is quite different; and it appears that the only justification for speaking of the *goura* as "a kind of jews-harp," is the fact of both instruments being held to the mouth in playing. That the reasons for so doing are quite distinct in the two cases is apt to be too lightly overlooked.

For the sake of a scientific classification of musical instruments, I trust that the jews-harps may be kept quite distinct from both the "musical bows" and the *goura*, at any rate until good evidence is forthcoming to prove the existence of a phylogenetic connection which may justly cause them to be associated.

THE GOURA AND THE KITE BOWS.

If we seek to trace the phylogeny of the *goura*, in the hopes of discovering a chain of sequences leading up from some even simpler structure to the form under which it is found in South Africa, we are liable to experience some disappointment. Simple though the *goura* is, it is most unlikely that it was first invented in its present form, and we may feel sure that it developed out of some pre-existing form of instrument, as experience revealed the latter's potentialities, and its capability of being improved. I know of no instruments which appear to illustrate satisfactorily this developmental series. But, in spite of this deficiency, there exist certain types of instruments which present analogies more or less striking and significant and to which we may reasonably turn, in the hopes that these may at least suggest the manner in which the *goura* may have been evolved, even though we may be unable to prove them to be morphologically connected with the latter instrument.

Let me recall the essential features of the *goura*. (a) It is a strung bow; (b) It has a flat piece of quill interposed between one end of the bow-string and the bow, so as to produce, as it were, a *flattening* and *widening* of the bow-string at that point; (c) The sound is produced by *blowing* upon the quill, this causing the latter to oscillate rapidly, and communicate its vibrations to the string. When blown upon, the rotatory oscillation of the quill causes it alternately to present an edge and a flat surface to the current of air; alternately, therefore, allowing the latter to pass freely and checking it. The quill, therefore, acts to all intents as a *valve*, much as the simple reed of the clarinet and the double reed of the oboe. In what other instruments is the sound produced in a like manner?

A very simple "noise" instrument will occur to the minds of many. Any

boy knows that, by holding a blade of grass between his thumbs, so that one end is held between the joints at their base, and the other end between the upper joints, he can, by blowing between his thumbs across the edge of the grass-blade, produce a sound which, if not musical, is at least loud and annoying. The note is produced by the violent oscillation of the edge of the grass-blade, which is rapidly deflected from side to side under the impact of the blast of air. The grass-blade acts, in fact, just as does the quill of the *goura*, though not even Peter Kolbe would praise its music.

The similarity to the method of sounding the *goura* is increased by the description of the *goura* (*lesiba*) given by the Rev. E. Casalis (quoted above), since it would appear from this that the fingers are sometimes used to direct the current of air upon the quill. But while it offers a striking analogy, this rude grass-blade instrument can hardly be assigned a place in the phylogeny of the *goura*. We must turn to Eastern Asia in order to find instruments which at all nearly resemble the *goura*, and which may possibly prove to be actually related to it, to wit, bows with flat strings which are sounded by wind.

In those regions of the Far East where kite-flying is a favourite pastime of both young and old, and where kites are sometimes even used as a go-between twixt man and the unseen powers, it is frequently the custom to furnish the kites with tightly strained strings, in order that the latter may vibrate in a high wind and give forth musical notes. J. H. Gray writes:¹ "In the centre of Chinese kites, four or five metallic strings are fixed on the principle of the *Æolian* harp. When they are flying, 'slow-lisping notes as of the *Æolian* lyre,' are distinctly heard. . . ." He also quotes a legend dealing with the origin of this custom, the invention of which is attributed to a general of the time of Low-pong, the founder of the Hon dynasty. In a description of kite-flying at Hae-kwan in China we read,² "One of the chief improvements in this manufacture, which the Chinese arrogate to themselves, is the introduction of numerous cords strained across apertures in the paper. The resistance of the air acting upon these little bars, as the wind on the strings of an *Æolian* harp, produces a continued humming noise; and when many kites are flown in company, the combined tones are both loud and agreeable."

The Siens of Cambodia, too, attach to their kites "a musical instrument somewhat resembling a bow, and this, when agitated by the wind, produces sweet and melodious sounds to which they are fond of listening."³ In Japan it is also customary to attach a "hummer," *unari*, to large kites. This is fastened to the top of the kite, and consists of a bow of bamboo with a cord of raw hide. Boys are extremely proud of the noise made by these kites. At Nagasaki, kites having such a "hummer" attached are called *bara-mon*.⁴

¹ Gray, *China*. Lond., 1878, p. 270.

² Thos. Alom and G. N. Wright, *China*, iv, p. 7 and plate.

³ Mouhot, *Travels in Indo-China*, p. 254.

⁴ S. Culin, *Corran Games*, Philad., 1895, p. 16.

One of these Japanese kite bows, *unari*, was sent to me for the Pitt Rivers Museum by Professor B. H. Chamberlain. It consists of a slender and light bamboo bow, 4 feet $1\frac{3}{4}$ inches long, measured across the curve. The string is of flat, woven tape, $\frac{3}{16}$ -inch wide, and terminates at either end in a little wooden cross-bar, which acts as a toggle whereby the string is fastened to the ends of the bow. Professor Chamberlain tells me that these bows are called *unari* (i.e., "the thing which sounds U"). They are affixed to the back of the kites, horizontally across, near the top, with the object of making a whirring or buzzing sound when the kites are flown in a high wind. One can produce the sound readily by holding the *unari* in the hand and waving it rapidly through the air, so that the edge of the flat string is presented to the air-resistance. Professor Chamberlain further mentions the occasional use of strips of whalebone (*baleen*) for making the flat string.

I received from Mrs. J. Crosby Brown, the well known collector of musical instruments, a small bow which is evidently made for this same purpose, and which is probably from either China or Japan (Pl. XII, 5). It is of bamboo, $24\frac{3}{4}$ inches long, curving rather suddenly towards the ends. The extremities are furnished with T-shaped cross pieces of bamboo, $1\frac{1}{2}$ inches long, and through these the string, which is a very thin band of bamboo, $\frac{3}{8}$ to $\frac{1}{16}$ inch wide, is fixed. The ends are partly wrapped round with paper.

The custom of attaching a humming bow to kites extends as far to the east as Java, where "the kites, *lejangan*, are sometimes fitted with fiddle-bow-shaped humming instruments which sound in the breeze."¹

It is to be noted in the above descriptions that many of these wind-sounded bows are furnished with *flat* strings.

In Northern India we find a further approximation towards the *goura*, in the use of flattened quills of feathers for creating this Æolian music. A rectangular kite in the Pitt Rivers Museum is fitted with two little bamboo bars at the top, independent of the necessary structure of the kite, and each (Pl. XII, 6) is furnished with a flattened quill, apparently from the feather of a peacock's tail. When these quills are tightened up, each little bar becomes a miniature bow with a flat, ribbon-like string of quill, which would buzz well in a breeze. In other examples these little quill-strung bows form part of the actual framework of the kites themselves.

Here, then, we have instances, extending over a wide area, of bows with *flat* strings, used for producing musical notes which are caused by the wind throwing the strings into vibration. The higher the wind, the more rapid are the vibrations, and consequently the higher the notes produced. In India, and possibly elsewhere, the strings are sometimes of quill, the latter having been slit longitudinally and flattened out into a ribbon-like form.

This is a *goura* to all intents and purposes; the main difference consisting in the quill of the *goura* not extending the whole length of the bow, but only a

¹ J. Th. Mayer, *Een Blik in het Javaanische Volksleven*, Leiden, 1897, ii, p. 317 and figure.

short distance, the remaining portion of the bow-string being of thin twisted string of fibre or sinew. The string of the *goura* is, in fact, flattened *locally* only. Assuming the possibility of this form having been derived from an original form in which the quill extended from end to end of the bow, we may easily account for the reduction in size of the quill. In the first place, the difficulty, perhaps impossibility, of obtaining in South Africa quills of a sufficient length for the purpose, is obvious, and it was no doubt a simple solution to the difficulty to eke out the length by adding a cord of sinew or other material. Again, it must be remembered that, as the *goura* is blown upon by the mouth, the blast being, therefore, applied only *locally*, there is no advantage in having a quill of more than, say, 2 inches in length. In fact, experiment proves that a long quill is less efficient than a short one for producing sound, when the breath is used instead of the wind; the former cannot, as does the latter, impinge equally through the length of the string. It seems to me that the *goura* with its short piece of quill is the form which would naturally be arrived at in altering the flat-stringed humming-bow from a wind-blown to a mouth-blown instrument. If this was the actual manner in which the *goura* developed, its relationship to the "musical bows" is to be traced, not directly through forms hitherto recorded from Africa, but through a family of wind-blown or "Æolian" bows which is still represented by the kite-bows in Asiatic regions, but which, so far as I can ascertain, has no representatives in Africa.

If I am justified in thus tentatively associating into a single family the Oriental wind-blown bows with flat strings and the South African *goura*, the matter may have some further significance in connection with suggestions which I have offered in my monograph upon the "musical bow," as to the possible, if not probable, existence of a true family relationship between the ordinary "musical bows" of the East and those of Africa. At any rate, the fact of the *essential* features of the eastern wind-blown bows and the *goura* being the same, seems to offer far better reasons for associating these into one morphological group than can be urged in favour of placing the *goura* in a heterogeneous group with the ordinary "musical bows" of Africa. The latter grouping may appear at first sight to be the more natural, but it involves our ignoring differences of a fundamental nature. The method by which the sound is produced in the *goura* and *lesiba* places these instruments in a category by themselves, so far as known *African* instruments are concerned; hence the necessity for looking elsewhere for instruments which may at least suggest a phylogeny for this most peculiar type of wind-stringed instrument.

THE GOURA AND THE "BULL-ROARER."

Before closing this paper, it may be of interest if I draw attention briefly to the curious analogy which exists between the *goura* and the "whizzing-sticks," commonly known as "bull-roarers," which are so widely distributed over the

world. The "whizzing-stick" consists of a flat slat of wood of varying shape, suspended by a cord which is attached to one extremity. The sound is produced, as is well-known, by the performer holding the other end of the cord, and rapidly whirling the wooden blade in a circle through the air. The resistance offered by the latter causes the blade to rotate rapidly, so that it presents alternately its edge and its flat surface to the air, thus creating a sound-vibration, the pitch of which varies with the speed of rotation. The quicker the rotation the higher the note emitted. Except for the minor fact of the instrument being driven against the wind, instead of the wind being directed against the instrument, the "bull-roarer" resembles the *goura* in the mode in which the sound is produced; and there is even a striking structural similarity between the two instruments. Both are *wind* instruments consisting of a cord having attached at one end a flat, blade-like object through the medium of which the sound is produced as described. In the *goura*, the flat quill, being also attached to the bow, is unable to rotate completely and simply oscillates to and fro, and the cord is kept tense by the spring of the bow. In the "bull-roarer," the flat piece of wood, being free at one end, can rotate completely, and the string is kept taut by the weight of the wood *plus* the centrifugal force engendered by the whirling. The net result is essentially the same. In many "bull-roarers" the string is attached to one end of a stick, which is held in the hand, so that they resemble a whip with a flat wooden blade at the end of the lash, and, in the case of these, the resemblance to the *goura* is most striking, as all the parts of the latter are present—bow, bow-string, and vibrating blade, the relative proportion of the parts and the non-attachment of the blade to the bow being the essential differences (Pl. XII, 7 and 8).

This close resemblance between the *goura* and the "bull-roarer" is no doubt fortuitous, and is probably not due to any genetic affinity, but such analogies are worth recording, especially since, in any classification of musical instruments according to the methods of sound-production, these two types would necessarily be brought into close proximity, and would, in fact, have to be placed in the same group. It is, moreover, not impossible that the one instrument may have influenced the other in its development, even though they may have originated independently, for we must remember that the home of the *goura* is also one of the chief habitats of the bull-roarer, which is well-known amongst the Bushmen of South Africa (Pl. XII, 8).

CONCLUSION.

From what has been said it will, I hope, be seen that while the *goura* may rightly claim to be studied in connection with the "musical bows," yet, by reason of the peculiarity of the manner in which its notes are produced, involving a distinctive structural feature, its investigation must be approached upon different lines; and it should be placed in a separate category, associated, possibly by right of kinship, with the Asiatic wind-blown bows, through which a relationship with

the ordinary "musical bows" may be traced. The possible relationship to the "bull-roarers" is too problematical to be seriously considered without further evidence, though the analogy is one which merits attention in considering the various methods whereby sound is produced in the different classes of musical instruments.

Descriptions of the Illustrations.

Plates XII to XIV.

- Fig. 1. *Goura*, Bushman, S. Africa. Presented to the Ashmolean Museum by Capt. H. F. de Lisle, in 1827. Now in the Pitt Rivers Museum at Oxford. Length, 3 feet 10 inches.
- 1a. Portion of the same showing the form of the quill, and its attachment to the "bow" and to the string.
- Fig. 2. *Goura*, Bushman. Portion only, showing the quill and its attachment. Copied from figure in the *Natural History of Man*, by the Rev. J. G. Wood, i, p. 294.
- Fig. 3. *Leiba*, Basuto, S. Africa. From a specimen in the British Museum.
- 3a. Butt of the same looking down upon the quill and showing its attachment by means of a split peg.
- 3b. Side view of the quill and attachment peg.
- Fig. 4. *Goura*, Gonaqui Hottentot. From figure in Vaillant's *Travels from the Cape of Good Hope into the Interior of Africa*, 1790, ii, pl. p. 2.
- Fig. 5. Small bamboo bow with flat, ribbon-like string of bamboo, (?) Chinese or Japanese. Probably for attaching to kites. Specimen sent by Mrs. J. Crosby Brown to the Pitt Rivers Museum, Oxford.
- Fig. 6. Miniature bow with flat string made from the quill of a peacock's feather. India. These are attached to kites so as to buzz in the wind. Pitt-Rivers Museum.
- Fig. 7. Whizzer or "bull-roarer," attached to a stick. Type found in the Torres Straits and elsewhere.
- Fig. 8. Whizzer or "bull-roarer," Bushman, S. Africa. After the figure in Ratzel's *Völkerkunde*, English translation, ii, p. 275.
- Fig. 9. Enlarged reproduction of the illustrations of the Hottentot "gom gom," in Peter Kolbe's *Cape of Good Hope*, translated 1731, p. 271.
- Fig. 10. Bushman performing upon the *goura*. Copied from Burchell's *Travels in the Interior of South Africa*, 1822, i, p. 458, plate.
- Fig. 11. Babi of Fernando Po playing upon the "musical bow." After O. Baumann, *Eine Africanische Tropen-Insel*, 1888, p. 99.
- Fig. 12. Swazi woman playing upon the *imiqangala*, a "musical bow." From a photograph sent from the Trappist Monastery at Mariannhill, Natal.
- Fig. 13. Boy of New Britain, S. Pacific, playing upon the *pangolo*, a "musical bow." From a photograph sent me by Mrs. J. Crosby Brown.
- Fig. 14. Patagonian playing upon the *Koh-lo*, a "musical bow." From the *American Anthropologist*, 1896, xi, p. 93. Described by Dr. H. ten Kate.
- Fig. 15. Basuto girl playing upon the *thomo*, a musical bow with gourd resonator. From F. Christol, *Au Sud de l'Afrique*, 1897, p. 83.

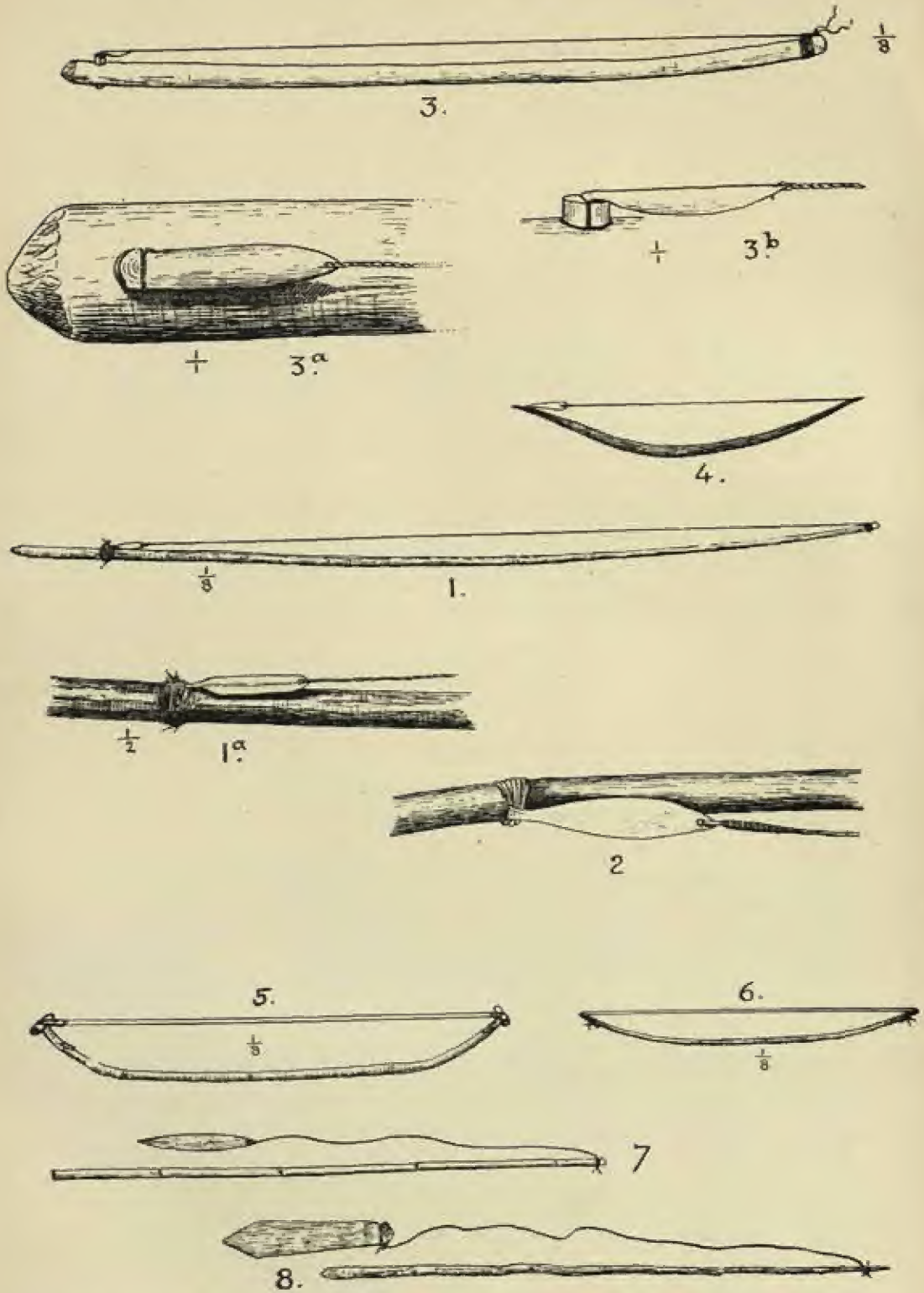
DISCUSSION.

The Rev. H. N. HUTCHINSON pointed out that the musical bow with a gourd at the end was the prototype of the harp. The gourd being in time discarded its place was taken by a sounding board. In the British Museum Ethnological Collection there is a case illustrating the evolution of the harp in this manner.

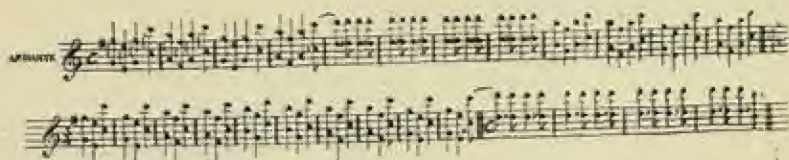
Mr. READ, after referring to the difficulties encountered in dealing with an

isolated type of instrument, such as the *goura* seemed to be, without any cognate types existing anywhere on the whole African Continent, expressed his opinion that regard should be had to the known southerly drifting of many classes of objects now found in South Africa, and that if the explanation of the origin of the *goura* was to be found in Africa, it should be looked for in the north. He thought, moreover, that it would be safer to class the *goura* with the bull-roarer rather than with the musical bow, from which in principle it was really widely separated, in spite of their superficial resemblance.

Mr. BALFOUR, in replying to Mr. Read, said that in his search for types of instruments possibly related to the *goura*, and capable of throwing light upon its origin, he had searched the records of African musical instruments from all parts of that continent, and from no part had he been as yet able to find instruments presenting affinities other than the remotest. Hence he had been obliged, in his quest, to go farther afield, and search elsewhere for instruments which might help to elucidate the obscure origin of the isolated South Africa *goura*. With the wind-blown, flat-stringed bows of Eastern Asia there might be a true morphological connection, and at any rate they do suggest a possible evolution for the *goura*. Association of this instrument with the "bull-roarers" must, he thought, be based rather upon the similarity in the method of producing sound and the analogy presented by the essential structure of the two classes of instruments, than upon any probable phylogenetic affinity. In connection with Mr. Hutchinson's remarks, he readily endorsed what Mr. Hutchinson said as to the evolution of the harp from the bow. He had for several years been engaged in working out the series of transitions which appear to have led from the primitive up to the final forms, and for many years a series in the Pitt Rivers Museum at Oxford had illustrated in a general way these probable transitions.



THE GOURA, A STRINGED-WIND INSTRUMENT OF THE BUSHMEN AND HOTTENTOTS.



10. BUBI OF FERNANDO PO PLAYING UPON THE "MUSICAL BOW."



9. BUSHMEN PERFORMING UPON THE GOURA.





FIG. 11.—Eubi, of Fernando Po, playing upon the "musical bow." After O. Baumann, *Eine Afrikanische Tropen-Insel*, 1888, p. 99.

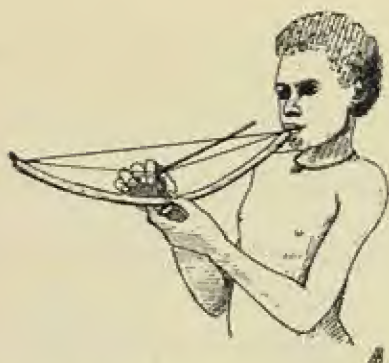


FIG. 13.—Boy of New Britain, South Pacific, playing upon the pangulu, a "musical bow." From a photograph by Mrs. J. Crosby Brown.



FIG. 14.—Patagonian playing upon the tak'lo, a "musical bow." From *the American Anthropologist*, 1898, xi, p. 92. Described by Dr. H. ten Kate.



FIG. 12.—Swazi woman playing upon the isigangela, a "musical bow." From a photograph sent from the Trappist Monastery at Mariannhill, Natal.



FIG. 15.—Basuto girl playing upon the tiemo, a musical bow with gourd resonator. From F. Christol, *Au Sud de l'Afrique*, 1897, p. 83.



CRANIOLOGICAL NOTES ON THE ABORIGINES OF TASMANIA.

By W. L. H. DUCKWORTH, M.A., Fellow of Jesus College, Cambridge; University Lecturer in Physical Anthropology.

THE rarity of the osteological remains of the aboriginal Tasmanians will, it is thought, justify the presentation of the following notes on the specimens in the Anatomical Museum at Cambridge. The specimens are five in number and a note as to their provenance is appended. They will be considered in the numerical order in which they appear in the Cambridge catalogue.

The first specimen (Figs. 1 and 2), numbered 2096, is a male¹ skull and fairly complete, though only fragments of teeth remain and the mandible is absent. The capacity is small (1,130 cc.); the breadth index (73·9) places it in the



FIG. 1.—SKULL OF TASMANIAN: NORMA VERTICALIS.

dolichocephalic category, and the altitudinal index, being lower than the breadth index, confers on it the character of platycephaly. Of the other indices, the most interesting are the nasal (64·9), which indicates great relative breadth of the nasal aperture, and the stephano-zygomatic, which indicates that the specimen is highly phanozygous. Of the general characters of this skull, it remains to say that the glabellar prominence is extremely well marked, that the mastoid processes are small, the zygomatic arches slender, and other muscular ridges well marked. Synostosis is observed at the pterion on each side, the parietal and sphenoid bones

articulating in this region. As regards the facial skeleton, the nasal bones have evidently been strongly upturned, as in the crania of aborigines of Australia. The overhanging brow-ridges give great apparent depth to the orbits, and the lacrimo-ethmoid suture is very short. When viewed in norma basilaris, the

¹ The donor believed it to be a female skull, but there is but little doubt that this is not so, and the sex is almost certainly male.

palate is seen to be elliptical, the choanae small, the pterygoid plates small, though allowance must be made for reduction through weathering; the tuber maxillare is not conspicuously large. An important point is the shallowness of the bony auditory meatus, which on one side is perforated. On one side the inferior petrosal sinus grooves deeply the side of the basi-occipital (the notch thus produced must not be confounded with the rare notch indicating a separation of the basi-occipital into anterior and posterior portions).

The next specimen, 2097, is a mandible belonging to an adolescent individual, inasmuch as the third molars have only just made their way to the surface. It is noteworthy that although this mandible presents features characteristic of a lowly race in respect of the short ascending ramus and shallow notch, yet the chin is well developed. The genial tubercles are short, but quite distinct. The



FIG. 2.—SKULL OF TASMANIAN; NORMA LATERALIS.

teeth are large, and, with the exception of the two second molars, in good preservation. Both the molars just mentioned show the effects of carious degeneration, which on the left side has led to an alveolar abscess, communicating by a fistulous opening with the buccal aspect of the maxilla. The socket of the first molar tooth on the same side seems also to have been the seat of a similar abscess, though of much

smaller dimensions. The small size of the mandible when compared with the next specimen suggests that it is that of a female.

No. 2098 is likewise a mandible, probably that of a male, being much stouter than the last. It has been exposed to a considerable amount of weathering, and all the incisor and both canine teeth have been lost (*post mortem*). The chief points of interest are as follows:—The chin is prominent, though not so much so as in 2097. The genial tubercles are replaced by a low vertical ridge. The body of the mandible is massive, the ascending ramus short, and the sigmoid notch shallow. The molar teeth are large, and their crowns so divided as to present a pentacuspitate appearance in the case of the second and third, and probably of the first, although there does not remain enough of the crowns of these teeth to justify a more decided statement. This is quite possibly the mandible belonging to the following specimen.

No. 2099 is the fore part of a male skull and face without the mandible. The

facial characters are so like those of the first described specimen (No. 2096) as to render further description superfluous. As regards the general characters of this skull (No. 2099), it will be found that the higher degree of prognathism (index 113·2) is accompanied by greater skull-breadth and stouter zygomatic arches than in No. 2096. The palate is larger and is elliptical, the auditory meatus remains on the left side only, and is shallow. The basi-occipital is notched by the inferior petrosal sinus, as was the case in No. 2096, but more deeply than in the latter. Within the cranium the interesting points to notice are: the strong impressions made by the frontal cerebral convolutions on the endocranial surface; the small size of the crista-galli and dorsum sellæ. The floccular fossa is small, and the borders of the foramina optica curiously thickened. The frontal and the temporal bones articulate at the pterion on each side.

Specimen No. 2100 is a calvaria, seemingly that of a male. Synostosis is far advanced, especially in the coronal suture, and is more pronounced endocranially than on the exterior of the skull. Two small wormian bones are seen at the lambda. On the right side, epipteric ossicles seem to have been present, but are almost indistinguishable. On the left side the squamous and frontal bones seem to have articulated at the pterion. The mastoid processes are very small, the auditory meatus shallow. Post-orbital frontal compression is marked; the calvaria is long and lozenge-shaped and its capacity small (1,130 cc.).

It is now possible to review the series as a whole, and the first point to notice is that out of three specimens available for observation two possess a fronto-squamous articulation in the region of the pterion. According to Turner (*Challenger Reports*, "Human Crania") this has not been hitherto recorded in crania of aborigines of Tasmania. It is further noteworthy that in the remaining specimen the appearances, though obscure owing to synostosis, denote that the spheno-parietal suture was very short. With regard to general appearances, the specimens resemble other crania of aboriginal Tasmanians, such as those described by De Quatrefages (*Crania Ethnica*). The most perfect specimen, viz., the example first described (2096) presents fairly typical features, which are evidently in most respects exaggerations of the characteristics of the crania of aboriginal Australians. Especially is this the case in regard to the following specific points, viz., capacity, post-orbital frontal compression, glabellar prominence, nasal bones (flat and upturned), width of nasal aperture, indefiniteness of the lower margins of that aperture (bothro-craspedote character), prognathism, macrodontism, smallness of mastoid processes, flatness of contour of squamous portion of temporal bone, channelling of the ali-sphenoids, shortness of the lacrymo-ethmoidal suture, presence of a rounded transverse occipital torus, and in the characters of scaphocephaly, phænozygism, and the possession of the lozenge-shaped outline in norma verticalis. But there remains at least one craniological difference to notice. The Tasmanians have not quite such elongated skulls as the neighbouring aborigines of Australia. The difference is noteworthy, and is possibly associated with the smaller average size of the Tasmanian aboriginal, for it is the exception

to find a high degree of dolichocephaly among the dwarf races. On the whole, however, judged by their cranial characters, the affinities of the Tasmanian aborigines are evidently with the aborigines of the neighbouring island-continent, rather than with any other race, and in these characters no striking resemblances to any of the dwarf races are demonstrable.

The foregoing statements will give some idea of the characteristic features of the crania of Tasmanian aborigines in the Cambridge Museum. The following notes are descriptive of the provenance of the specimens, and a table of measurements is appended. Two of the specimens, No. 2096, and the mandible 2098, have been photographed. The mandible is approximately of the same dimensions as regards breadth as that of No. 2096, and the photograph was reproduced in the *Journal of Anatomy and Physiology*, vol. xxxiv (*Proc. Anat. Soc.*).

Two photographs are appended to the present account, viz., Figs. 1 and 2, representing the specimen 2096 in *norma verticalis* (Fig. 1) and in *norma lateralis* (Fig. 2) respectively. The numbers are those of the Cambridge Catalogue.

No. 2096. Skull of Tasmanian; from Mr. T. Anford, Tasmania, 1845, per the Rev. H. G. Tomkins. Mr. Anford believed it to be the skull of a female.

No. 2097. Presented by James Bonwick, Esq., with specimen No. 2100.

No. 2098. No reference; it was with No. 2096, to which, however, it does not belong.

No. 2099. Bears a card on which is written:

"Mr. Chas. Harrison (?), Sudbury, from Mr. Edmund Abbott,"
and on the reverse: "Port L.....,"

No. 2100. Skull of Tasmanian; presented by James Bonwick, Esq.

DIMENSIONS OF SKULLS OF ABORIGINES OF TASMANIA: (*Cambridge University Collection*).

No. of skull	2099	2096	2100
Sex	Male.	Male.	Male?
Age	Adult.	Adult.	Aged.
Cubic capacity	?	1,130	1,130 (app.)
Maximum length	?	180	180
Ophryo-occipital length	?	174	177
Ophryo-iniac length	?	172	177
Occipito-spinal length	?	184	?
Occipito-alveolar length	?	192	?
Maximum breadth	?	133 (p.)	130 (p.)
Bi-asterial breadth	?	109	105
Bi-auricular breadth	112	118	118
Bi-stephanic breadth	107	100	96?
Minimum frontal breadth	92	84	88
External bi-orbital breadth	104	103	105?
Minimum inter-orbital breadth	24	25	24
Jugo-nasal breadth	93	94	?
Bi-malar breadth	110	108	?
Bi-zygomatic breadth	?	124	?
Bi-maxillary breadth	85	87	?
Ophryo-mental length	129?	?	?
Ophryo-alveolar length	82	87	?
Nasi-mental length	102	?	?
Nasi-alveolar length	58	58	?
Basi-mental length	110	?	?
Basi-alveolar length	103	98	?
Basi-nasal length	91	95	?

Basi-bregmatic length	123	123	?
Basion-obelion; length	?	118	?
Basion-lambda; length	?	107	?
Basi-iniac length	?	81	?
Basion-opisthion; length	?	37	?
Breadth of foramen magnum	28	28	?
Orbital height	29	29	?
Orbital breadth	38	37	
Nasal height	41	37	
Nasal breadth	26	24	
Palato-maxillary length	60	51	
Palato-maxillary breadth	63	63	?
Horizontal circumference	?	499	502
Supra-auricular arc	290	282	285
Oblique parietal arc	?	347	340
Frontal arc	125	124	124
Parietal arc	?	121	128
Occipital arc (superior)	?	56	55
Occipital arc (inferior)	?	50	?
Jugo-nasal arc	103	104	?

LOWER JAW: No.	2098	2097	
Symphysial height	31	22	
Coronoid height	52	51	
Condylar height	55	50	
Gonio-symphysial length	77	70	
Intergonial breadth	95	80	
Intercondylar breadth	85	84	
Intercondylar breadth (exterior)	105	103	
Intercondylar breadth (interior)	67	71	
Breadth of ascending ramus	34	31	
Angle of ascending ramus	108°	114°	

	2099	2096	2100
<i>Indices:</i>			
Cephalic	?	73.9	72.3
Vertical	?	68.4	?
Alveolar	113.2	103.15	?
Orbital	76.3	78.4	?
Nasal	63.4	64.9	?
Palato-maxillary	105	123.5	
Superior facial (Broca)	?	70.2	?
Superior facial (Kollmann)	?	46.8	?
Stephano-zygomatic	?	80.6	?
Naso-malar	110.75	110.6	?

MAORI NOMENCLATURE.

NOTES ON THE CONSANGUINEOUS, AFFINITATIVE, PERSONAL, TRIBAL, TOPOGRAPHICAL, FLORAL AND ORNITHOLOGICAL NOMENCLATURE OF THE MAORI RACE OF NEW ZEALAND.

BY ELSDON BEST.

THE following notes are by no means complete, inasmuch as they merely contain the terms used by the Tuhoe tribe of the Maori race of New Zealand. Such terms, describing degrees of consanguinity, etc., are not all in universal use among the various tribes of this interesting people. They differ to a certain extent, more particularly the terms descriptive of the more distant relationships.

The Maori systems of nomenclature and terminology were, so far as the knowledge of the people extended, copious, comprehensive, and complete. But, in order to grasp this fact, one must ever bear in mind the modes of life and of thought which obtained in Maoriland. The changes in both of these, which have been wrought by contact with Europeans, are my excuse for speaking in the past tense.

It does not enter into the scope of this paper to describe in detail the social organization of this far southern branch of the Polynesian race. It is, however necessary to say a few words anent the tribal organization of the Maori.

In the first place the following divisions may be noted.

1. The *waka* (vessel or migration).
2. The *iwi* (tribe).
3. The *hapu* (clan or sub-tribe).

The word *waka* means a canoe. The ancestors of the Maori arrived in New Zealand from Polynesia in large canoes, each of which would be capable of carrying from sixty to upwards of a hundred people. This term *waka* is applied to the tribes sprung from the crews of the above vessels. Hence the Tuhoe and other tribes of this district are termed the Mātātua collection of tribes, or migration, they being the descendants of the crew of that old-time vessel which reached this land somewhere about the time that the battle of Cressy was lost and won.¹

¹ Not that they found these isles uninhabited, for a previous migration of Polynesians had been here established for about 400 years, when the last migration here occurred, i.e., of Mātātua and other vessels.

The *tribe* or tribe. Each migration is divided into various tribes. Thus Ngati-Awa, Tuhoe, etc., are the Mātātua tribes, although in part descended from the original inhabitants of New Zealand.

The clan. Each tribe is subdivided into more or less *hapu* or clans, each of which would be under their own chiefs and hold their own lands. These clans were independent of each other. There was but little cohesion among them as a rule, unless a common enemy threatened the tribe. Then they would band together, each clan still under its own chiefs, and together face the enemy. Apart from the above, these clans often fought each other.

A clan, unless a very small one, was usually subdivided again into sub-*hapu*, which may be termed family groups. Each of these would probably occupy a village or fort of their own. Thus Ngati-Tuheā is the name of a subdivision of the Ngati-Tawhaki *hapu* of the Tuhoe tribe of the Mātātua migration, and is composed of the descendants of one Tuheā, who flourished four generations ago. The prefix Ngati- means offspring or descendants. Thus Ngati-Tuheā = the descendants of Tuheā. The prefixes Ati- and Whanau and Aitanga and Ngai- have a similar meaning.

The Ngati-Tawhaki *hapu* or clan are the descendants of one Tawhaki, who lived nine generations ago.

The tribe Tuhoe or Ngai-Tuhoe, are the descendants of one Tuhoe-potiki, who lived sixteen generations ago.

This is the usual style of tribal nomenclature, but it is not universal. The Tainui and Arawa tribes are named after canoes in which their ancestors came to New Zealand twenty generations ago. A tribe of this district bears the name of the Poho-Kotia (from *poho* = stomach, and *koti* = to cut) on account of one of their ancestors being disembowelled by an enemy. The Patu-wai clan take their name from the circumstance of a tribal ancestor being slain in the water (*patu* = to kill, *wai* = water). The Ngati-Kumara clan derive their name from the following incident. An ancestor of theirs, one Tama-kino, went to a neighbouring tribe in order to procure some seed *kumara* or sweet potatoes. He obtained them, but died shortly after his return home, having been bewitched during his visit. All his descendants took the clan name above mentioned.

A war party were stealthily surrounding a fortified village in this district one night, some nine generations ago, and imitated the cry of the *kareke* bird¹ as they did so. The survivors of the garrison then dropped their old tribal name and assumed that of "the Kareke."

When Te Manu-anare was slain, nine generations ago, his head was cut off and preserved in the usual manner, but it never looked well to the Maori eye, as the skin wrinkled so much in the drying process. His descendants bear the clan name of Te Upoko-Rehe, i.e., the Wrinkled Head.

The Ngati-Rakei clan derived their name from an ancestor. One Pukeko, a

¹ *Kareke*, the New Zealand quail, now extinct.

chief of that people, heard that a party under the leadership of Te Onewa, was coming to attack him. He therefore made his warriors discard their spears and conceal their short striking weapons under their cloaks. Then they received the enemy in an apparently friendly manner. Pukeko, staff in hand, came to the front and performed a dance (*haka*) before the party. When near to Te Onewa, he laid that chief low by means of a vigorous blow. At the same time his party drew their weapons, and the end was not well for Te Onewa and party. And Ngati-Rakei have since been known as Ngati-haka, *i.e.*, the descendants of the dance, or dancer.

Among the Maori people there is no family life as we know it. The family group or sub-clan obtains and would appear to take the place of the family. There is no term to describe a family, including the parents. The nearest approach is *whanau*, which means offspring.

As a result of this we note that the common terms for father and mother are also applied to uncles, aunts, etc., while cousins are termed "sister" and "brother." In like manner, nephews and nieces are termed "son" and "daughter," or spoken of by their uncles and aunts as "my children." But more of this anon.

Neither the Maori tribe nor clan can be termed either exogamous or endogamous, inasmuch as the members sometimes married into other tribes and more often into other clans.¹ The marriage of near relatives, such as first cousins, is abhorred, and indeed is looked upon as incest; such relatives being termed brothers and sisters.

The parents' claim on their children is not such as it is with us. Children are often taken and reared by relatives, more especially by such of the latter as are childless. Also a girl's marriage is often arranged by her aunts or other relatives, her own parents taking no part in the arrangements. It will thus be seen that the Maori family is by no means cohesive. The family group, or sub-clan, is much more so.

In regard to the social organization of the Maori, it may be said that society was divided into the following classes:—

1. The *ariki*, or nobles, or high chiefs.
2. The *rangatira*, or ordinary chiefs, or well-born people.
3. The commoners, *wāre* or *tūtūā*.
4. Slaves, *taurakereka*.

Primogeniture obtains in full force in Maoriland. The *ariki* (first-born) line of descent is the most important. The *ariki* families of strong and influential tribes were possessed of great *mānā*² in former times, and indeed the first-born son and first-born daughter were intensely *tapu* or sacred. Such an *ariki* was believed to possess considerable powers of a supernatural nature, and was almost looked upon as an *atua*, or god. He probably would really become so after his death, for many tribal gods were the spirits of ancestors.

¹ The sub-*hapu*, or family group was, and is, exogamous however.

² *Mānā* = prestige, power, influence.

We will now proceed to speak of the different terms of relationship and their application, after which we will give illustrations in tabulated form, and also by utilizing the accompanying genealogy of a portion of a family group of this district, members of the Tuhoe tribe. In order to grasp the peculiar use of such terms as mother, sister, father, etc., it must be borne in mind that they were, and are, used by a people among whom the family group, and not the family, was practically the leading feature in social organization. Again, many of the terms given differ in their application among other tribes. The matter contained in this paper has been communicated by members of the Tuhoe tribe alone. Such matter, or information, albeit not complete, will yet give an idea of the system of Maori nomenclature.

<i>Pāpārā</i>	...	...	Father.—Applies to the speaker's true father only.
<i>Pāpā</i>	...	...	Father.—Applied to speaker's true father, and also to his or her father's or mother's brothers and sons of his mother's and father's uncles. Thus, in using the term <i>pāpā</i> to denote his true father, the speaker will, when wishing to be exact, say: " <i>Toku pāpā, nana nei ahau,</i> " i.e., my father, he who begat me. It will be noted that <i>pāpāra</i> is a much better term, yet I have never heard it among other tribes than Tuhoe.
<i>Mātūa</i>	...	...	Parent. <i>Mātūa</i> in plural. <i>Mātūa tānē</i> =male parent, i.e., the speaker's true father. <i>Mātūa wāhine</i> =female parent, mother. If <i>mātūa</i> alone is used then it is understood that "father" is meant.
<i>Mātūa kēkē</i>	...	...	Sometimes used instead of <i>pāpā</i> , etc., to denote children of parents, uncles, or aunts. (By some tribes applied to uncles and aunts of speaker.)
<i>Mātūa whāngai</i>	...	...	Foster-parent. (<i>Whāngai</i> =to feed, rear, bring up.)
<i>Pāpā whakaūngi</i>	...	...	Stepfather. A singular expression this.
<i>Whāteā whakaūngi</i>	...	...	Stepmother. The word <i>whakaūngi</i> appears to mean "to hover over," or "soar" or "fly" as a kite. <i>Whaka</i> is a causative prefix.
			<i>Whaka-ango</i> means to swoop downwards, as a bird, and then turn and soar upwards.
<i>Kōrōūā</i>	...	...	Applied to grandfathers, also to uncles of speaker's parents. Also to an old man, to denote old age.
<i>Tipūnā</i>	...	...	Applied to great-grandparents of speaker, also to ancestors generally. Becomes <i>tipuna</i> in plural.
			<i>Tipūnā tuarua</i> means great-great-grandparent (<i>tuarua</i> =second). <i>Tipūnā</i> = <i>tipūnā</i> , these two terms are applied to male and female.
			<i>Tipūnā</i> is also applied to grandparents by some, in

which case *tūpūnā tuarua* would mean "great-grand-parents."

A great grandmother is sometimes termed "*Kūia tuarua*," and a great-grandfather "*Kōrōūā tuarua*."

Whāeā } ... } Mother. Also applied to sisters of speaker's mother, and
Kōkā } ... } to father's sisters, etc. Cf. *pāpā*. *Whāeā kēkē* (*kēkē* =
in a different line).

Te Pou (see gen.) would say "Maku is a *whāeā* of mine, a *whāeā kelle*."¹

Kōkārd ... Mother, i.e., the true mother of speaker. It does not apply to her sisters, etc. Cf. *pāpārd*.

Mātūa wāhine ... See *supra*.

Whāerēerē ... The Tuhoe tribe apply this term to a woman who has borne a child, hence with them it equals "mother."

Among the Arawa and other tribes it is only applied to animals that have borne young.

Kōrōūā ... { *whāeā* } Applied by the Tuhoe tribe to persons and
mother } animals.

By Te Arawa and other tribes to animals only.

Kūia ... Grandmother. Also applied to aunts of speaker's parents.

Also applied to an old woman to denote old age.²

Tūākāna ... Elder brother of a male. Elder sister of a female.

Also applied by both sexes to children of fathers, and mothers, elder brothers and sisters.

Tūākāna tānē ... (Female speaker.) Elder sister's husband. Husband's elder brother.

Tūākāna wāhine ... (Male speaker.) Elder brother's wife. Wife's elder sister.

*Tāinā*³ ... Younger brother of a male. Younger sister of a female.

Also applied by both sexes to children of fathers and mothers, younger brothers and sisters.

Tāinā tānē ... Younger sister's husband (female speaker). Husband's younger brother.

Tāinā wāhine ... (Male speaker.) Younger brother's wife. Wife's younger sister.

Tūahine ... Sister of a man. Female cousin of a man.

A man would term his parent's cousins daughters his *tūahine kēkē* (*kēkē* = in a different line). See table and remarks under *tūngāne*.

¹ I.e., he would say so in explanation to a stranger, but in ordinary conversation he would merely speak of Maku as his *whāeā*.

² *Kūia* is sometimes applied by a husband to his wife, although she may be a young woman, but the pronoun differs "*toku kūia*" = my grandmother; "*taku kūia*" = my old woman, i.e., wife; *to* and *o* are possessive, *ta* and *a* are active.

³ *Tēinā* is a variant form.

Tūngāne ... (Female speaker) brother. Male children of parents, brothers and sisters. The speaker would also apply the term *tāina* to her cousins, if they are children of her parent's younger brother or sister, and *tūākāna* if they are children of her parent's elder brother or sister. See table.

When a woman wishes to explain that she is speaking of her elder brother, she uses the word *tūngāne* (brother) and adds "*to mua nei i a au*" (elder than I), or else the phrase *tūngāne tūākāna*. For, it will be observed, she has at her command terms to denote "elder sister" and "younger sister," but not so for "elder brother" and "younger brother," nothing but the general term "brother."

In like manner, in order to denote "younger brother" she will say "my brother, *to muri nei i a au*" (younger than I), or else use the term *tūngāne tāina*.¹

And a man will say "My sister, older than I" or "younger than I," or else use the expression "*tūāhine tūākāna*" or "*tūāhine tāina*." The latter terms are not often used.

A native woman of the district wrote me, asking for some food for her children. She wound up by writing—"From your sister and daughter." This was stretching the application of those terms with a vengeance.

Another native woman, whom I endeavoured to help during an inter-tribal fight, said to me: "*Ka waiho hoe hai pāpā tuturu moku*," (You shall be as a permanent father to me.) From which it will be seen that, although cut off from civilized man, I am by no means relationless in the wilds of Tuhoealand.

Tatao ... This term is used to denote all the speaker's brothers and sisters younger than himself or herself.

Tāmāiti whakaāngi Stepchild.

Tāmā ... Son, eldest son, eldest son of brother or sister. Eldest son of children of younger sisters or brothers of parents.

Tāmā-a-roa ... First-born son. Perhaps only applied during babyhood, as in the remark: "So and so has given birth to a child. It is a *tāmā-a-roa*." It appears to resemble the term *pēkē-ā-tāmā* (branch of man, i.e., offspring of man) which is a sort of emblematical term for man. *Tāmā-ōtū*, again, is a term used in order to personify the "inner man."

¹ The terms *tūngāne tūākāna* and *tūngāne tāina* are but seldom heard; they are compound expressions.

"The *pēkā-ā-tāmā* (man)," says an old Maori proverb "dies, is buried and is seen no more. Not so the *pēkā-ā-kai* (food) which reproduces itself." Alluding to the burying of seed, *taro*, *kumara*, etc., in the earth, they grow again. These terms are but seldom used.

Tāmāhinē First-born daughter. Eldest daughter of brother or of sister. Eldest daughter of children of younger sisters or brothers of parents. Among some tribes this term bears merely the meaning of "daughter," not of "first-born daughter." Among Tuhoe it bears the latter meaning.
Tāmāhinē = daughter } with many tribes.
Tāmāhinē = daughters }

"*Me te aroaro tāmāhinē.*" A saying applied to an admired object, as a neat house. It is compared to the face, aspect or presence of a fair maiden.

"*Ma te poho tāmāhinē.*" A similar saying to above. Applied to neat, smooth work, as smooth, evenly laid bark lining of a house. It is as smooth as the skin of a maid.

Pōtiki Youngest child. An infant.

"My *pōtiki*" implies either the youngest of my own children, or of my brothers or sister's children, or the youngest born to children of children of my parents, younger sisters or brothers. It is applied to either sex. The terms *muringa*, *whākāpākāngā* and *tamānga-kotore* are also applied to the youngest child, regardless of sex.

"*Pōtiki whatiwhati toki*," the axe breaking *pōtiki*, is a saying applied to a youngest child, to denote pertness, mischievousness, etc. Another saying "*He pōtiki kai hamuti*," illustrates the system of primogeniture which obtains among the natives. The eldest son and eldest daughter were the important members of a family. The *pōtiki* had but scant respect paid to him or her, and possessed but little influence.

However, in some cases, the *pōtiki* would, by means of superior intelligence or bravery or combativeness, rise to power and lead the people. To such an one, the expression—" *Te pōtiki whakahirahira* " would be applied. *Whakahirahira*, v. t. extol; magnify to depreciation of others; extol oneself. *Te* = the definite article, singular, becomes *nga* in plural.

Tāmāiti Child. *Tāmāriki* in plural. Applies to both sexes. As applied to relatives—"my *tāmāiti*" may be my own

child, or my brother's or sister's child, or the child of my parent's younger sister's or brother's child. In order to indicate the sex of child, it is necessary to say "*tāmāitī tānē*" (male child), or "*tāmāitī wāhine*" (female child). *Tai-tāmārikī* signifies a youth. A native will not only speak of his brother's and sister's children as "my children," but he will speak of them to their parent as "our children." I have even heard a native, when speaking to another man, refer to his own wife as "*ta, taua wāhine*," i.e., "our wife" (*taua*=we two, including person spoken to. *Ta* is active possessive.)

Tāmārikitanga=*itinga*=*ohinga*=childhood, youth.

Mōkōpūā ... Grandchild. Child of a son, daughter, or of children of one's brother's and sister's children.

Mōkōpūā tuarua denotes a great-grandchild (*tuarua*=twice or second). *Mōkōpūā tuatoru* means a great-great-grandchild, and so on.

Tāokētē ... Wife's brother. Husband's sister.

Hūnaonga ... { Daughter's husband. Son's wife.
Brother or sister's son's wife. Brother or sister's daughter's husband.

Hūngārēi }
Hūngārēi } ... Wife's parents. Husband's parents.

Whakaāngi ... Child of wife's brother or sister. Child of husband's brother or sister.

Hoahoa ... { Wife of husband's brother. Husband of wife's sister.
Applied by polygamous wives to each other.

Turanga whānau ... { This term implies cousinship, though not applied to first cousins by the Tuhoe tribe, but to those twice and thrice removed.

Irāmutu ... Among most tribes appears to be used for "nephew" and "niece," but is not so used by the tribes of this district, i.e., not used to denote the offspring of a brother or sister, the term "child" or "children" is used in such cases.

Irāmutu is here (in the Tuhoe district) applied to male grandchildren of parent's younger sisters or brothers. However, it is certainly used to denote children of speaker's brother or sister by many tribes.

Tānē ... Man (*vir*),¹ male. Also "husband."

Tāmāitī tānē=male child, boy, youth.

Tāmārikī tānē=male children.

(*Tāmārikī*=youth or child, as opposed to adult.)

¹ *Tangata*=man (*homo*).

<i>Wāhīnē</i>	...	...	Woman, female. Also "wife."
<i>Hoa</i>	...	...	Friend, companion. <i>Hoa wāhīnē</i> (i.e., female companion), is used to denote "wife," or sometimes simply <i>hoa</i> is used.
<i>Wāhīnē mātua</i>	...	...	A term applied to the first and principal wife in polygamous marriages, which still obtain here. (<i>mātua</i> =first, also "important.") The term <i>muri-manu</i> ¹ is applied to the second, or second and third wives, in such cases. <i>Pūndrūa</i> =having two wives. <i>Pūnātoru</i> =having three wives. <i>Pūndūhā</i> =having four wives.
<i>Autānē</i>	...	...	Husband's brother. Not used in Tuhoe land.
<i>Auwāhīnē</i>	...	...	Wife's sister. Not used by Tuhoe tribe.

There are a few more terms to be explained yet. We have seen that a person, in speaking of his, or her, eldest son or daughter, or the eldest son or daughter of a brother or sister, will say "my *tāmā*" and "my *tāmāhīnē*." But the following are the terms used ordinarily to denote the eldest male and female of a family.

<i>Mātāmūa</i>	...	...	First, elder. A term applied to the eldest male and eldest female of a family, the two most important and influential members of such.
<i>Āriti</i>	...	...	First-born male, and first-born female of a family of note. Such first-born of high-born families were <i>tapu</i> , and generally took up priestly duties.

The terms *tapairu* and *marci-kura* were also applied to the first-born daughter of such a family, and *whatukura* to the first-born male.

A man in speaking of his own elder children would say: "*Taku tāmā*," i.e., my eldest son, and "*Taku tāmāhīnē*," i.e., my eldest daughter. He would not say "*Taku āriti*,"² to denote his eldest-born son or daughter, nor would he say "*taku mātāmūa*."

When a woman of any note is in the straw with her first child she is rendered intensely *tāpū*, and is termed *rapou* at such a time.

<i>Whānū</i>	Offspring, descendants.
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¹ *Muri* = afterwards, subsequent time. *Manu* = bird.

² *Āriti* also means "master." *Toku āriti* = my chief or my master, not *taku āriti*. As an illustration of the uses of *a* and *o* in Maori pronouns: *He toki maku* = an axe for me, i.e., for me to use (active). *He toki ake* = an axe for me, i.e., to be used against me.

<i>Whānāungā</i>	...	Relative, blood relation. In speaking collectively, this term includes all blood relations of speaker, but it is often used to denote distant relationship only. The term <i>huāngā</i> bears the same meaning, and is used in a similar way.
<i>Huatahi</i>	...	This term is applied to an only child. <i>Toi-te-huatahi</i> , a famous ancestor, was so named on account of his being an only child.
<i>Rūrūhi</i>	...	An old woman. <i>Rūhi</i> =weak, exhausted.
<i>Ngōingōi</i>	...	An old woman.
<i>Kōrōhēkē</i>	...	An old man. <i>Koroheketa</i> =old age. <i>Tai Kōrōhēkē</i> =elderly man.
<i>Kōrōū</i>	...	An old man. Also see table.
<i>Pākēkē</i>	...	Adult. Becomes <i>pākēkē</i> in plural. <i>Toku pākēkē</i> =my elder. <i>Oku pākēkē</i> =my elders. <i>Tuapākēkē</i> =adult, grown man, advancing in years.
<i>Kāumatū</i>	...	Old person. Adult.
<i>Kūia</i>	...	Old woman. Also see table. <i>Tai-kūia</i> =elderly woman.
<i>Ruāhīnē</i>	...	Old woman. Also applied to a woman employed in various rites, to take off <i>tapu</i> from persons, etc.
<i>Hakoro</i>	...	An old man.
<i>Pūdrū</i>	...	Widow. Widower.
<i>Pānī</i>	...	Orphan. Widow. Widower.
<i>Ahungarua</i>	...	Middle aged person, literally "facing two ways."
<i>Hīnē</i>	...	Girl. Used in address principally. <i>Hīnenga</i> =girlhood
<i>Kōhīnē</i>	...	Girl.
<i>Kōtūro</i>	...	Girl.
<i>Ohī</i>	...	Child (opposed to adult). <i>Ohinga</i> =childhood.
<i>Whetke</i>	...	Old man.
<i>Tāhāe</i>	...	Person. <i>Tai-tāhāe</i> =young man.
<i>Tangata</i>	...	Man (<i>homo</i>), person.
<i>Taharua</i>	...	(two-sided). A term applied to a person connected with two tribes. <i>Tahatoru</i> =a person connected with three tribes.

Terms of Address.

To a girl, "*E hīnē!*" (O girl.) Also "*E ko!*"

To young people of both sexes, "*E hika.*" Applied by some tribes to elderly people. Cf. *hika*=to beget a child.

One female to another, "*E kare!*"

To young persons of both sexes, "*E tā!*" Also applied to adults by East Coast tribes.

To boys and young men, or elderly men, if unmarried, "*E tā mā!*"

To elderly men, "*E koro!*"

To a father, "*E pa!*" Applied to any man among some tribes.

General, "*E hoa!*" (O friend!)

To a mother, "*E whae!*" Sometimes applied to elderly women, whether mothers or not.

To an old woman, "*E kui!*"

The plural in all these forms of address is formed by adding "*ma,*" as "*E hoa ma!*" "*E pa ma!*" etc.

Among the natives of New Zealand terms of consanguinity are not used in addressing such relations, except sometimes in formal speeches, such terms as *pāpā*, *tāinā*, etc., are used to denote an uncle, cousin, etc. Even in such cases the speaker is really addressing the meeting, not the individual.

Children never say "father" or "mother" in addressing their parents, but call them by their names, or an abbreviation thereof in common use.

Sometimes the interjection "*E*" is placed after the name in address, as "*Tinaku E!*" A chief, in addressing the tribe, often uses the expression "*E te whānau,*" In address, if a person's name is of more than two syllables, the first one or two syllables only are used. Thus I would address Horomona as "*E Horo!*" and Te Wharekiri as "*E Whare!*" Sometimes the final syllables are taken, as Puke for Te Tapuke.

A man, more especially a chief, will often speak of himself and the tribe as *māua* or *ngai māua* (*māua*, pron. we two; excluding the person addressed), as if only two persons were included.

Karanga-rua. This expression is applied to a person for whom the speaker has "two names" or "two titles" (*karanga-rua*). For instance, a man may have a cousin who is both a *tūākīnē* and *tūākāna* to him, she being a female of an elder branch of the family. He would therefore term her his *Karanga-rua*.

In regard to the accompanying genealogy. We will give a few applications of terms of relationship, utilizing this genealogy as an illustration, although a somewhat cramped one:

Maku (female), a daughter of Marie and Himiona.

Maku terms Te Hira her *tūngāne* (brother). They are really first cousins.

Maku terms the children of Hira, her "children"; the eldest son, her *tāmā*; the eldest daughter, her *tāmāhīnē*; the youngest child, her *pōtikī*, be it male or female. Had Hira any male children, Te Kokau and Horomona would term them their *irāmutu*.

Te Kokau and Horomona term Hira's daughters their "children" or "daughters." They would term Tarai their "*tāmāhīnē*," and Mata their "*pōtikī*."

Maku terms Rawiri her *tāmā* and Kiriwai her *tāmāhīnē*.

Maku terms children of Kiriwai and Rawiri, her *mōkōpūnā*, a term she would also apply to grandchildren of Taahi.

Maku terms Te Whare her *tūngāne kēkē*¹ and *turanga whānāu*.

The children of Rawiri term the children of Te Are "relatives" (*whānāunga*) only.

Maku terms Te Waha-mu her *kūia* (as also do her brothers and sister).

Maku terms Toko her *kōrōnā* (as also do her brothers and sister).

Rawiri terms Te Wahamu his *kūia tuarua* (as also do Pou and Kiriwai).

Maku, and all children of Marie, term Matawha their *kōrōnā*.

Children of Te Kokau term Matawha their *kōrōnā tuarua* or *tīpūnā tuarua*.

Children of Marie term sisters of Te Wahamu their *kūia*, and brothers of Te Wahamu their *kōrōnā*, and Kiriātua their *tīpūnā tuarua* or *kūia tuarua*. They term Tama-hape their *kōrōnā tuarua*, or simply *tīpūnā* (ancestor). They term the father of Himiona, their *kōrōnā*; the mother of Himiona, their *kūia*. They term sisters of Te Waha-mu their *kūia*, and brothers of Te Waha-mu their *kōrōnā*.

Te Hira terms Maku his *tūākānā* or *tūākāna*. He terms Te Kokau his *tūākāna*. He terms children of Te Kokau his *tāmārikī*, and Rawiri his *tāmā*.

Tarai and Mata term children of Te Kokau their *tūākāna*, because the latter are members of an elder branch of the family group, albeit the *aho āritikī*, or first-born line of descent from Kiriātua and Tamahape, is that through Toko.

Te Arumana and Putiputi term each other *hoahoa*.

Ka terms Te Arumana and Putiputi *hoahoa*, and *vice versa*.

Paitini terms husband of Taahi his *hoahoa*, and *vice versa*.

Maku terms Ka, Te Arumana and Putiputi, *tāokētē*.

Te Whare and Mehaka are *turanga whānāu* to Maku, and *vice versa*.

Maku terms Pirihita *whācā*.

Maku terms Marie *kokara* and *whācā* and *mātāua wāhānā*.

Maku terms Himiona *pāpārā* and *pāpā* and *mātāua tānē*.

Maku terms Pahiri either *pāpā* or *mātāua kēkē*.

Children of Marie and Eruera are *turanga whānāu*. So termed because all are descended from a common ancestor, i.e., from Matawha.

Maku terms Te Kokau *tūngāne*.

Maku terms Taahi *tāinā*.

Maku terms Taahi's husband *tāinā tānē*.

Te Kokau terms Horomona his *tāinā*, and Paitini his *tāokētē*, and Putiputi his *tāinā wāhānā*, and Tane his *hūnaonga*, and Kahu his *hūnaonga*, and Rangī-ihu and Hine his *mōkōpūnā*.

Horomona terms Te Arumana his *tūākāna wāhānā*.

¹ *Tūngāne kēkē* means "brother in a different line."

Putiputi terms Te Kokau her *tūākāna tānē*.¹

Te Arumana terms Horomona her *tāinā tānē*.

Te Arumana terms Himiona and Marie her *hūngarēi*.

Paitini terms Kokau and Horomona his *tāokētē*, and Taahi his *tāinā wāhine*, and Marie and Himiona his *hūngārēi*.

Maku, Horomona and Taahi are, collectively, the *tatao* of Te Kokau.

Personal Nomenclature.

The personal nomenclature of the Maori is interesting. The origin of many of their personal names is most singular, as also is the habit of changing names which often occurs several times during the life of a person.

Names are derived from every object, act, expression or thought under the sun; at least it appears so. We will give the origin of some personal names, as illustrations of the above remark.

Rongo-tangi-awa. This is a famous ancestor of the Bay of Plenty tribes.

His mother was in a fishing canoe and said to her companions: "I can hear my unborn child, or is it the rippling of the water?" When born the child was given the name of Rongo-tangi-awa from *rongo*=to hear, *tangi*=sound, *awa*=river or stream.

Kakahu-tapiki. Nuku of the Children of Awa said: "I will slay Te Kiato of Tuhoe as a sacrifice to take the *tapu* off the *tapikitanga* of my new cloak. *Tapiki*=the finishing off of a cloak or mat by the weaver, the turning in and fastening of the thread ends. On hearing of this threat Te Kiato gave his son the name of Kakahu-tapiki, *i.e.*, the completed garment. The descendants of that youth are known as Ngati-Kakahu-tapiki, *i.e.*, the descendants of Kakahu-tapiki.

Horo-mata. The Eye swallower. After the defeat of Ngati-Awa at Te Kaunga, a member of that tribe composed a virulent song directed against the victors, in which the poet threatened to swallow the eyes of Te Puehu. A relative of the latter at once assumed the above name.

When Taurua of Tuhoe was slain by N-Awa at Wai-mangeo, one of his children received the name of that battle field.

When Akuhata was shot by the troops at Te Karetu, his sister took the name of Te Karetu, discarding her former name. In the old fighting days this sort of thing helped to keep green the memory of an insult, or wrong, or defeat.

When Ta-whakamoe was slain at Te Roto-iti, his body was covered with the coarse grass known as *wi*. Hence his child received the name of Kahu-wi, *kahu*=clothing or garment.

A native, whose daughter died in the summer season, took the name of Raumati (summer), discarding his former name.

¹ *Tūākāna* always bears the meaning of "elder," whether applied to a male or female or another line of descent from a common ancestor; also *tāinā* always means "younger."

Names are often taken from the last food partaken of by a relative before death. A native woman fed her sick child on canned milk, termed *miraka* by the Maori. The child died and the mother took the name of *Miraka*, or milk. A native was, during his last illness, given a decoction of roots of the clematis (*pua-wananga*) as medicine. He died, and his daughter assumed the name of *Pua-wananga*.

A woman at the Roto-iti applied some starch to her sick child. The child died (strange to relate) and the mother changed her own name to *Nga-taahi* (The Starch). This is, of course, half English: *Nga*=definite article, plural, and *taahi*, the native pronunciation of our word starch.

The last nourishment taken by a dying child at Rua-toki was a drink of tea. The child died and a relative assumed the name of *Te O-ti*. *Te*=the, *O*=last food partaken of by a dying person, *ti*=tea.

A native named *Rehua* was killed here by a rolling log at a sawpit. His younger brother then dropped his name of *Te Pou* and assumed that of "The Log," while a young nephew of the dead man was given his name, *Rehua*. It is a common thing for a man to take the name of an elder brother when the latter dies. In former times he usually took the widow also, as wife.

The following are a few personal names of natives in this district. Most of these names have a story connected with them.

The Soaring Bird.
The Mussel.
The Scout Killer.
Slain at Sea.
The Great Ocean.
The Stone-hearted.

The Star.
The Whale.
The Short Fish.
The Wood Eater.
The Wide Earth.
Driftwood.

The changing of personal and of topographical names was a common occurrence in Macriland, and indeed is still so.

In this wise. The child *Tunui* was named after one of the numerous gods of the Maori pantheon. He was afterwards given the name of his mother's father, *Kawatiri*. In after years he changed his name to *Kākā*. A relative of his had been slain by witchcraft. An enemy sent him some parrots (*kākā*) over which life-destroying spells had been recited. The hapless recipient ate the birds and of course perished. Hence *Kawatiri* took the name of *Kākā*, the Parrot. In after years he joined in the assault of the Pakake fort at Napier. While assaulting the fort, a relative of his missed his footing and fell on to a heap of firewood. Hence *Kākā* took the name of *Taka-wahie* (*taka*=to fall off, *wahie*=firewood).

Young children often have a baby-name assigned to them, but as they grow up and approach the age of puberty another name is given them and the baby-name is discarded.

¹ *O* really means "food for a journey." *O matenga*=food for the death journey, i.e., the passage of the spirit to Hades.

In the case of a new-born child of a family of note, a name would be given the child so soon as it was born. This was a *tapu* (sacred) name, for the child would be intensely *tapu* from birth until the *tua* rite was performed over it. The sacred name is for that period only, another name being given it at the above rite. This latter name would be *noa* or common, *i.e.*, void of *tapu*. These remarks anent the *tapu* name, it must be borne in mind, refer to the first-born male and first-born female child only.

In regard to this sacred name, we give an illustration taken from an important family of this district (Tuhoealand). When the eldest son of Tapui was born, he received the name of Mātāhi-nui-o-tau. This was the child's *tapu* name. This name it was necessary to treat with the greatest respect, as also the rules pertaining thereto. As the word *matahi* bears the meaning of "one" or "first," the word *kotahi*,¹ which is usually employed to denote "one," was not allowed to be used for so long as the child bore the *tapu* or sacred name. In its place the word *koteke* was used for "one." Should any man insult the child by making use of the word *kotahi*, he would be severely dealt with, and possibly slain. For using that word would have the effect of making the child *noa* or common—polluted, in fact. But after the *tapu* was lifted from the child by the priest in the orthodox manner, then the word *kotahi* might be used by any one. It amounted to this: that the word given as a name to the child must be expunged from the vernacular for so long as the child is *tapu*.

Another *tapu* name assigned to a child in this district was Te Ahiahi-o-ruanuku. Now *ahiahi* means "evening" in the vernacular, therefore the word *maruke* was used for "evening," so long as the term *ahiahi* was *tapu*. When the *tapu* or sacredness was taken off this child, a human sacrifice was made in order to give prestige to the function and its attendant invocations.

Topographical Nomenclature.

The origins of place-names in Maoriland are as varied as those of personal names. Some of these names were brought from the isles of Polynesia; that is to say, when the natives arrived here they named various places after their old homes in the many-isled sea.

We give a few illustrations of the origins of place-names. When the Children of Manawa ventured to return to Whirinaki after they had been swept from those lands by Tuhoe, they cast about for a suitable site for a village. They were looking at one of the river flats and one asked old Rewi: "What do you think of this place?" The old chief replied: "*He pai noa iho*," *i.e.*, "It will do very well." The village was built there and received the name of Pai-noa-iho, which it still bears.

In a fight that occurred near Te Teko, the name of the last man slain was Te Wharangi. That place where he was slain has ever since been known by his name.

Natives were employed in making a road in to this district from Fort Galatea.

¹ *Tahi* is the word for "one," *ma* and *ko* are prefixes.

A man named Parata said of a new sideling cutting, "It looks like a belt on the breast of the hill." Hence that place is ever known as Te Tātua o Parata (The Belt of Parata), for we retain the native names here.

A gentleman, rejoicing in the name of Red-eyed Tu, was strolling around the headwaters of the Waiau one fine morn, some nine generations ago, when he espied a stranger lying asleep by the embers of a fire. Tu, being of a humorous turn of mind, proceeded to scoop the embers on to the body of the sleeper, presumably for the pleasure of seeing him jump. Anyhow that place has ever since been known as Ahi-herna, or the Scooped Fire.

The nomenclature of battles in the old fighting days was a somewhat singular feature, and at least betokened an ingenious turn of mind in the Maori.

A battle which took place between rival tribes at Rua-toki was termed Kohi-pi, on account of so many children being captured (*kohi*=to collect *pi*=young of birds, but sometimes applied to children).

A battle which took place on the sea beach near Torere was named Paenga-toitoi (*paenga*=cast ashore, *toitoi*=a fish), because the dead lay so thick upon the beach that they looked like a shoal of the *toitoi* fish cast ashore.

A battle which took place on the banks of a creek on the Tahora block is ever known as Wai-whereo (the Reddened Waters), because the waters ran red with the blood of many men.

The Maori people have a most complete system of nomenclature for the flora of New Zealand. They are acquainted with the sex of trees, etc., and have distinct names for the male and female of some trees. Also they have different names for trees which change the form of their leaves, at the different stages of growth. In many cases they have a special name for the flowers of tree or shrub. They have special names for the pumpkin and gourd, at different stages of growth. The shrub *coprosma grandifolia* has three terms applied to it: one to the trunk, one to the leaves, and one to the berries. They have different names for young unexpanded leaves and the leaf of full growth. This applies more especially to ferns and aerogenous flora of that type. They have one name (*rau*) for ordinary leaves and another (*wha*) for long and narrow leaves of the bulrush, native flax, etc. The old dried leaves (*wha*) of the *toi* are termed *kuka*. The *poporo* shrub has a different name before it begins to bear fruit. Its fruit is termed *kahoho*.

Iho is a term applied to the very centre of a tree. *Taihaka* and other terms are applied to the heart wood. *Taita* is the sapwood. A root is *paiaka*. A rootlet is *weu*. A branch is *peka* or *munga*, but a very large branch is *ruha*. Barks have different names, according to their nature.

The *perei* is an edible root, but when searching for it you must not mention that name or you will never find it. At such a time you must term it *maikaika*.

Every plant and fern has its name in Maoriland; the knowledge in woodcraft displayed by the elderly men is most complete, and such men are extremely interesting companions in the bush. They also have names for all the many varieties of fungi, toadstools, etc.

In like manner the Maori is acquainted with the male and female of birds in many cases, and has different names for such. The *koko* or *tui* (bird) has four names. The male is termed *kopurehe* and the female *kouwha*, from the time of the flowering of the *kotukutuku* tree until the berries of the *hinau* appear. During the remainder of the year the male bird is termed *kokouri* and the female bird *kokotea*. The tail of a bird is termed *kotore* or *hurumaeko*, while the tail of an animal is *waero* or *whiore*, and that of a fish is *hiku* or *huki*. *Pokai*, meaning a flock, is a generic term, while a flock of *kaka* is termed a *whaka-rua*, a flock of pigeons is a *tipapa*, a flock of *tui* is a *wiri*, while the word *ta* is applied to a flock of whiteheads or crows. Three different names are applied to the cry of the *kākā* parrot. One for the ordinary harsh scream of that bird, one for the sound they make when (apparently) quarrelling, and one for the cry it makes when alarmed.

But enough has been said to show that the Maori system of nomenclature, although differing from that of civilized peoples, is yet most complete and comprehensive for a race which has but just recently been dragged from the Stone Age into the broad light of day. This paper is somewhat incomplete, but to explain the varied use of terms of relationship, etc., as used among such observers of etiquette as the Maori, would take much time and much space, which are not always available.

SYSTEM OF CONSANGUINITY AND MAORI NOMENCLATURE.

		The Speaker.	
The Person spoken of.		Male.	Female.
Degree of Consanguinity.		Term used.	Term used.
Father	... ..	<i>Pāpārā</i> (true or real father) <i>Pāpā</i> <i>Mātūa</i> ¹ <i>tānē</i> (male parent)...	} Same. } Same.
Mother	... ..	<i>Kōkōra</i> (true or real mother) <i>Whāeā</i> or <i>Kōkā</i> <i>Mātūa</i> ¹ <i>wāhine</i> (female parent)	
Elder brother ²	... ..	<i>Tāhākāna</i>	
Younger brother	... ..	<i>Tāinā</i> or <i>tēinā</i>	<i>Tāngāne.</i>
Elder sister ²	... ..	<i>Tāhākāne</i>	<i>Tāngāne.</i>
Younger sister	... ..	<i>Tāhākāne</i>	<i>Tāhākāna.</i>
Father's brother	... ..	<i>Pāpā</i>	<i>Tāinā</i> or <i>tēinā.</i>
" sister	... ..	<i>Whāeā</i> or <i>Kōkā</i>	<i>Pāpā.</i>
			<i>Whāeā</i> or <i>Kōkā.</i>

¹ Becomes *mātūa* in some cases.

¹ Becomes *mātūa* in plural.

² The English words "brother" and "sister," etc., are here used with English meaning, not with the meaning of the native terms.

The Person spoken of.	The Speaker.	
	Male.	Female.
Degree of Consanguinity.	Term used.	Term used.
Father's mother	<i>Kūia</i>	<i>Kūia.</i>
" father	<i>Kōrōua</i>	<i>Kōrōua.</i>
" mother's brother	"	"
" " sister	<i>Kūia</i>	<i>Kūia.</i>
" father's brother... ..	<i>Kōrōua</i>	<i>Kōrōua.</i>
" " sister	<i>Kūia</i>	<i>Kūia.</i>
" mother's mother	<i>Kūia tuarua</i> or <i>Tipūnā</i> <i>tuarua</i> . ¹	Same.
" " father... ..	<i>Kōrōua tuarua</i> or <i>Tipūnā</i> <i>tuarua</i> . ¹	"
Step-father	<i>Pāpā whakaāngi</i>	"
Mother's brother... ..	<i>Pāpā</i>	<i>Pāpā.</i>
" sister	<i>Whāeā</i> or <i>Kōkā</i>	<i>Whāeā</i> or <i>Kōkā.</i>
" mother	<i>Kūia</i>	<i>Kūia.</i>
" father	<i>Kōrōua</i>	Same.
" mother's brother	<i>Kōrōua</i>	"
" " sister... ..	<i>Kūia</i>	"
" father's brother	<i>Kōrōua</i>	"
" " sister	<i>Kūia</i>	"
" mother's mother	<i>Kūia tuarua</i> or <i>Tipūnā</i> <i>tuarua</i> .	"
" " brother's son... ..	<i>Pāpā</i> or <i>Mātua kēkē</i>	"
" grandparents	<i>Tipūnā</i> (<i>Tipūnā</i> in plural)	"
Step-mother	<i>Whāeā whakaāngi</i>	"
Step-child	<i>Tāmāitī</i> <i>whakaāngi</i>	"
Step-brother	No distinct term.	
Step-sister		
Children of father's elder brother	<i>Tūakāna</i> ²	"
" " younger "	<i>Tāinā</i> or <i>tēinā</i>	"
" " elder sister... ..	<i>Tūakāna</i>	"
" " younger "	<i>Tāinā</i> or <i>tēinā</i>	"
" " mother's elder brother or sister.	<i>Tūakāna</i>	"
" " mother's younger brother or sister.	<i>Tāinā</i> or <i>tēinā</i>	"
Eldest son of mother's or father's younger sister or brother's children.	<i>Tāmā</i>	" ³
Eldest daughter of mother's or father's younger sister or brother's children.	<i>Tāmāhine</i>	" ⁴

¹ *Tuarua* = second.

² Becomes *tāmāitī whakaāngi* in plural.

³ *Tūakāna* here denotes elder branch of family, *tāinā* those of younger branch.

⁴ Speaking generally, both speakers would say, *aku tāmāitī* = my children.

The Person spoken of.	The Speaker.		
	Male.		Female.
Degree of Consanguinity.	Term used.		Term used.
Youngest child of mother's or father's younger sister or brother's children.	<i>Pōtikē</i> ²	... ..	Same. ¹
Brother's or sister's eldest son ...	<i>Tāmā</i> ²	... ..	"
" " " youngest child	<i>Pōtikē</i> ²	... ..	"
" " " eldest daughter	<i>Tāmāhine</i> ²	... ..	"
" " " children (generally)	<i>Tāmāriki</i> ²	... ..	"
" " " children's children.	<i>Mōkōpūnā</i>	... ..
Children's children ...	<i>Mōkōpūnā</i>	... ..	"
" " " children ...	<i>Mōkōpūnā tuarua</i>	... ..	"
Elder sister's husband ...	<i>Tāokētē</i>	... ..	<i>Tāakāna tānē.</i>
Younger sister's husband ...	<i>Tāokētē</i>	... ..	<i>Tāina tānē.</i>
Elder brother's wife ...	<i>Tāakāna wāhine</i>	... ..	<i>Tāokētē.</i>
Younger brother's wife ...	<i>Tāina wāhine</i>	... ..	<i>Tāokētē.</i>
Brother's or sister's son's wife ...	<i>Hānaonga</i>	... ..	Same. ⁴
" " " daughter's husband.	<i>Hānaonga</i>	... ..	"
Husband's sister ...	...	...	<i>Tāokētē.</i>
Husband's elder brother...	...	...	<i>Tāakāna tānē.</i>
" younger brother ...	...	...	<i>Tāina tānē.</i>
" father or mother ...	...	...	<i>Hūngārēi</i> or <i>hūngāwai</i>
" child by former wife	...	...	<i>Tāmāiti whakaāngi</i> ⁵
Children of husband's brother or sister.	...	...	<i>Whakuāngi.</i>
Wife's brother ...	<i>Tāokētē.</i>		
" elder sister ...	<i>Tāakāna wāhine.</i>		
" younger sister ...	<i>Tāina wāhine.</i>		
" parents ...	<i>Hūngārēi</i> or <i>hūngāwai.</i>		
" child by former husband	<i>Tāmāiti whakaāngi</i> ⁵		
Husband of wife's sister ...	<i>Hoahoa.</i>		
Children of wife's brother or sister	<i>Whakuāngi.</i>		
Wife of husband's brother ...	...	...	<i>Hoahoa.</i>
Younger sisters and brothers ...	<i>Tatao</i>	... ..	<i>Tatao</i> ⁶

¹ Speaking generally, both speakers would say *aku tāmāriki* = my children.

² The term *irāmutu* (nephew) may also be applied generally to such of these children as are males.

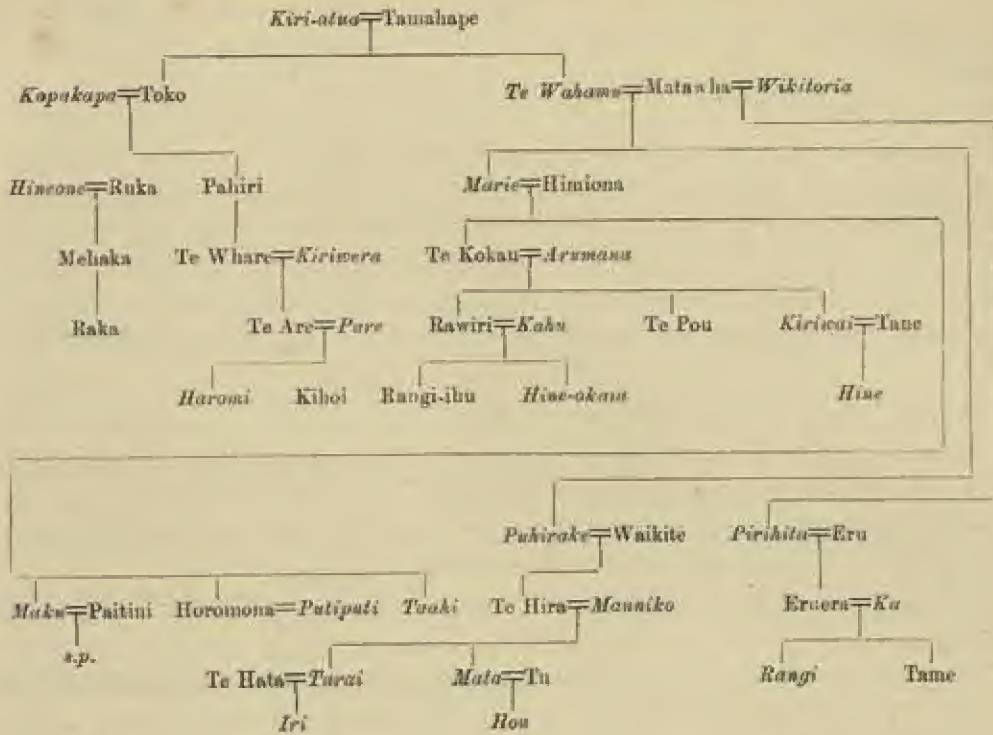
³ *Tāmāiti* in singular. *Taku tāmāiti* = my child. *Aku tāmāriki* = my children.

⁴ If such wife or husband happens to be a relative, she or he is termed *hānaonga tāmāiti* i.e., child son-in-law, or child daughter-in-law.

⁵ *Tāmāriki whakuāngi* in the plural.

⁶ *Tatao* is applied to such collectively. The individual terms are given above.

GENEALOGY ILLUSTRATING MAORI CONSANGUINITY.¹



¹ Names of females in italics.

EXTRACTS FROM DIARIES KEPT IN CAR NICOBAR.

By V. SOLOMON, 1895-1901.

[WITH PLATE XV.]

INTRODUCTORY NOTE BY COLONEL R. C. TEMPLE, C.I.E., CHIEF COMMISSIONER,
ANDAMANS AND NICOBARS.

IN 1895 circumstances rendered it desirable to establish a fixed agency at Car Nicobar, and as the island is not adapted for Europeans it became necessary to select a native of India as agent. With the concurrence of the Right Rev. the Bishop of Rangoon the choice finally fell upon Mr. V. Solomon, a Catechist who had been for years employed at Port Blair in the Andamans.

A plot of ground was selected at Mûs in Car Nicobar for his residence, and purchased by myself from the inhabitants of the village in a manner partly explained in my article on the "Beginnings of Currency" published in this *Journal* (vol. xxix, p. 99). On this land a house for Mr. Solomon and his family was erected, and also a school for the boys he soon began to collect around him in order to educate them in an elementary manner.

So far the experiment has been most successful, Mr. Solomon having established himself as an efficient upholder of the peace in the islands, as general adviser to the semi-savage inhabitants in their private troubles and difficulties, as a diligent educator of youth, and as a reporter on all the affairs and occurrences of the island.

The peculiar value of his diaries lies in the fact that the Nicobarese ceremonies and public affairs of life are generally conducted at night, and are therefore entirely beyond the ken of the usual visitor and ordinary observer. They are also full of observations made entirely at first hand.

At my request Mr. E. H. Man, the most experienced European authority on the islands, has been so good as to go through the diaries, and without altering the text, to correct the spelling of Nicobarese words and place-names, and where necessary to make notes and supplementary observations of his own.

11th March, 1895.—According to instructions received from the Rev. J. Low, M.A., Chaplain, Port Blair, I left this on the 11th March, 1895, with a party consisting of five Nicobarese, two Andamanese boys, my two sons and an ex-convict servant, and proceeded to Car Nicobar in R.I.M.S. *Elphinstone*, in which the Chief

V. SOLOMON.—*Extracts from Diaries kept in Car Nicobar.*

Commissioner and party were going on a cruise round the Nicobar Islands. We reached Car Nicobar on the following evening and were landed at Sawi Bay, near Chuk-li-kup (the Cave of Edible-birds' nests).

The Chief Commissioner and party went ashore and visited several people in the village of Mûs and witnessed some singing and dancing, etc. The Chief Commissioner addressed the chief men of the village and a few released Nicobarese convicts and pointed out to them the folly of taking the law into their own hands, and killing persons suspected of witchcraft and others, and cautioned them seriously as to the consequences, all of which was interpreted by me to the audience. The people listened to these instructions attentively and promised submission and obedience. Presents were then distributed both to adults and children. The Chief Commissioner and party then left for the steamer, which sailed the same night for the other Nicobar Islands.

Myself and party took up our abode for the time being in the house of one Ibrahim, a Car Nicobarese. Soon afterwards I observed that a house and a few cocoanut trees were on fire near the spot where I was living. On inquiry, I was given to understand that a woman had been found to have gone astray with a neighbour, and her husband had called together a sort of court of inquiry, and had as a result given a dozen stripes to the woman and two dozen to the man with a cane, and had deprived the latter of his landed property. This was a new mode of punishment contrary to the customs of the people, but the original offender, being afraid of further action against him, ran away to the jungle, while the brother of the woman, ashamed at his sister's conduct, set fire to his own house and trees partly out of rage and partly in order to appease his injured brother-in-law. This settled the matter and the husband admitted his wife again to his house. Efforts were then made by the man who had run away towards a compromise, but these had not come to a conclusion before I left.

14th April, 1895.—During the night I gave a feast in honour of the day (Easter Sunday). The chief men of Mûs, Kenmai, Lapati, Chukehuacha, Tapoiming, Kenuaka and Tamalu were invited, and as the entertainment was strictly in accordance with the customs of the Nicobarese, a short account will, I believe, be interesting.

A week before an intended feast, a Nicobarese sends friends or dependents decorated with garlands to those he wishes to invite. When they arrive, they are entertained with betel, cheroots and toddy, and, if possible, a sucking pig. After this the invitation is given, and the intended guest is asked to bring some food with him to help out the feast. If he can, he accepts: if he cannot, he declines. On the night before the feast the guests are reminded by messenger. At the fixed time, usually at night, the guests arrive with baskets of food which they deliver to the house-wife. These consist of pork (roasted or boiled) cut into thick pieces; yams of different kinds; plantains and papayas (all boiled); *ku-wen* or bread-fruit pudding—all fastened to strings, in such a manner that each string may be given to one guest: one or two bamboos filled with toddy; betel-nut neatly folded and

fastened to thin bamboo sticks; and China tobacco (*Sauvdi ém*, or dog's hair as they style it) twisted in dry pandanus leaves and arranged in bamboo holders. The food brought by one guest can be shared with about ten or fifteen other persons. The host slaughters one or two pigs and prepares other things according to his ability.

When all the guests have arrived, toddy is served out first in a small bamboo vessel or in a clean cocoanut shell, and then the food is distributed in basket plates made of cane. The chiefs and elders sit in a row in the middle of the room and the others here and there scattered about, and while they are eating they smoke cheroots and chew betel nut at intervals. After finishing the food the elders commence to sing jovial songs followed by the younger men. Thus it will be seen that the Nicobarese dinner party costs the host very little; but, on the other hand, he must be prepared to return the obligation to help his friends when his turn comes. My feast was appreciated because I added to the usual contribution of the host, for I supplied them with plenty of rice and dall, fowls and sweetmeats.

24th September, 1897.—The people of Chukchuacha came to invite the people of Mûs for the feast *kana hâun*, which is to take place during the full moon of the current month. This is called *Mahankare*.¹

26th September.—The people of Chukchuacha sent men to all the villages to inform the people that the feast of *kana hâun* would take place in a week's time. This is the final invitation, which they call *Mi-nga-la*.

Among the festivals of the Car Nicobarese, *kana hâun* or exhuming the bones of the dead is the most important. Literally it is called *kana-hâun* = eat pig, *lit.* "carry of pig's flesh."² It is a very laborious and costly festival, commemorated with much ceremony commingled with joy and sorrow. The festival is observed every third or fourth year. All the islanders cannot observe it at one limited period, nor can the people of one whole village do so conjointly with another. If a few families of a village commemorate the feast during one year, other families take up the feast at some other convenient year, that is to say, when their stores are in abundance. They also remain until the bones of their deceased are free from ash. I witnessed this festival several times in different villages conducted with equal splendour and joy, but with a slight difference in each village. It consists of a course of ceremonies beginning from one new moon to another.³

The festival commences as follows:—

PROPOSAL.

About ten months prior to the feast, all the people of the village consult together and fix the festival month, and inform the rest of the villagers and obtain their promise to help in the matter.

¹ *Mâak-hare* means to call pigs for their food, as is done by their owners morning and evening, and does not mean what is here stated.

² Should be "when the remains of the dead are disinterred."

³ In the middle of which, viz. at full moon, the pigs are slaughtered and eaten.

INVITATION.

They then send messengers to give notice to all the villagers of the island about their proposals and send preliminary invitations. There are two kinds of invitations, viz., general and special. The general invitation is given to their friends and relatives, that they may join them in the feast and help in other respects. The special invitation is that of one family among the commemorators of the feast inviting the whole people of another village, that they may give a performance in their house on the occasion. If ten families of a village commemorate the feast, they would invite the people of ten distant villages for the purpose, while those of three adjacent villages will be invited generally.

Nā-Kopāh.

Their first duty after sending out invitations is to make a *nā-kopāh* (food for the burial ground). A few well-carved wooden poles about 50 to 60 feet in height, with cross battens, are prepared and fixed in the ground at Elpanam as well as in the interior of the village in front of the houses of the commemorators. On these they hang up varieties of yams, goians, dabs, bundles of betel leaf, bunches of cocoanuts, areca nuts, pandanus fruit, plantains, cheroots and other eatables to which they are accustomed, altogether about fifty kinds. Below the post, they keep teak-wood boxes containing new clothes and jewels, bottles of toddy and earthen pots from Chowra, and fence them carefully. The pole with all the contents from top to bottom is decorated nicely with flags and other toys, and looks like an Indian car. This is the labour of about twenty or thirty men for about three months. From the day this *nā-kopāh* is fixed in the ground they are restricted from killing pigs in their village.

On these occasions they take great care in repairing their cooking huts and erecting new ones and in making new roads and paths, which they do up to the limits of their village in each direction. The open ground at Elpanam and the graveyard are also cleared and kept tidy. In the meanwhile they try to procure sufficient quantities of provisions for the festival.

A month before the festival they prepare some more *nā-kopāh* similar to the one mentioned above, but these will be fixed in the ground just a week before the feast with fresh eatables hanging on them. After fixing this pole they send final notice to the guests in all villages.

Besides this, a week before the festival day, they prepare a *kare-ong-chōn*¹ (headstone of a tomb). This is another laborious and tiresome work, made as follows: a well-carved round log of wood, about 3 feet long and 1 foot in bulk, with four holes on the top, is prepared and kept in readiness. At the approach of the feast a lot of men and women join together and adorn it by rolling round the log a piece of white calico and fringe it with red or blue broad-cloth, tearing them into pieces and folding it like ribbon. Four large soup ladles

¹ Should be *Kui-metila*; *kare-ong-chōn* is the name of the decoration of coloured strips of cloth on the *kui-metila*.

are fastened to the holes of the log and in the middle of it, a cross-shaped iron pike about 6 feet in length, called *meráhta*, adorned with a lot of spoons, forks and soup ladles of all sizes. It also contains fancy weapons, toys, dolls and other curiosities, which glitter much on the iron rod. Some keep this in the newly-erected cook-house and others in the open yard. They particularly take the guests and friends to see this in order to show they are wealthy. The same iron rod is used by them in the rainy season as a magnet to prevent lightning and thunder.

The men then prepare two or three long temporary bamboo cages with separate enclosures for each pig, so that a dozen pigs may be enclosed in each cage. One is made underneath the house and the rest in front of the house.

Some people meantime decorate the canoes and fill them with all sorts of eatables and curiosities and keep them in front of the houses.

They obtain the help of their friends in the nearest villages, who neglecting their own affairs willingly come and help them in the work, for which purpose they even bring with them food sufficient for their own requirements till the close of the festival.

After all these preparations are over, then commences the preliminary ceremony called *wani-patti* (house decorations) which takes place a day before the festival. This is done as follows :—The interior of the house is decorated profusely with tender cocoanut leaves, goian plants and flags. Bunches of tender cocoanuts, areca-nuts and plantains are tied all around the posts of the house outside, that the guests may take at their leisure. Several pieces of chintz, red cloth and calico are hung up tied to a string in the interior of the house as well as underneath the house. The *meráhta* (iron pike) and the adorned canoes are placed on either side of the *ná-kopáh*. The bamboo cages intended for pigs are also decorated. When these further arrangements have been made they kill a pig, sprinkle the blood over all the decorations as a sacrifice, and sing and dance around the house for the first time with their general guests.

Then on the festival evening they bring with songs a lot of pigs from the piggery in the jungle, and leave them in the cages and dance before them. The pigs that are left in the cage underneath the house are only for exhibition, intended to show the condition of their wealth, and at the same time they are dedicated for a future festival. In the cages outside are left those pigs that are to be slaughtered during the festive season. There is another cage besides these in which they leave those pigs brought to them by their friends as festive gifts.

Kiriam kē-lakhut.

This is the second but chief festival. By eight or nine o'clock in the night the village is filled with almost the whole of the islanders,—a group of one village in one house. The special and general guests assemble in gangs in their respective quarters. The men are adorned with new loin cloths of various kinds and colours, a *tá-chōkla* or head ornament and a *tá-szha*, a necklace made of silver

pieces. The females are adorned with necklaces, ear-rings, bangles made by twisting silver wires on hand and leg and a string of silver coins as head ornament. They take much pains in cleaning the silver pieces by rubbing them in the sand that they may shine. A pair of Madras red handkerchiefs or two yards of red cloth and two yards of china blue cloth stitched together (both colours distinguishable) are worn by females as an under-garment. Some of them come already adorned from their houses. Others bring all these things with them and adorn themselves on the spot.

The special guests bring with them ten or twelve pigs of moderate size as presents to the party by whom they were invited. Here I have to say that the people, though they are well acquainted with each other, never call them friends. They have a regular agreement about this. Whoever contributes a pig during this festival is their only true friend. Special invitation for any occasion will be given only to this man by turns. The ladies bring with them baskets filled with prepared food such as boiled yams, rice *ku-uen*, etc., for luncheon, and with which they refresh themselves on that night, together with pork given at the time by the inviting party.

Then they commence to sing and dance by turns. The men give their performance first and when they are tired the females perform. The former in their dance go through various motions, by sitting, rising, bending and jumping, but the latter only in treading. They practice for this purpose from the time they receive the first notice. The same thing will be seen in the compound of each festival party throughout the night.

Hācat-ka-ku-hā-uen or *Ku-uan-ka-ku-hāun*.

In the morning, while dancing is still continued, they bring down some strong well-built wooden cages about 4 feet long and $3\frac{1}{2}$ feet in width and height, some in the shape of a palanquin and some of a dome-shape like their houses. These cages are gaily decorated with flags, chintz and gilt jewels. On the top of the cage is prepared a wooden terrace with curtains so as to seat two or three men. The cage is fastened on either side by two long substantial bamboos. Some huge, long-tusked boars adorned with jewels are left in these cages (one in each); a man, a woman and a boy are seated in the terrace or platform with a quantity of plantains and betel-nut. When everything is ready, new red loin-cloth with white tassel and *tā-chōkla* (the head ornament) are supplied to the guests. Then the cages with pigs and the people upon them are carried round from house to house in a procession with singing and dancing; each cage is borne by forty men or women; some of them, who are not able to prepare a cage, substitute long bamboos, tying the legs of the pigs and fastening them across the bamboo. As they are proceeding, betel-nuts and plantains are distributed by the party seated over the cages. The females exhibit more amusement, with the heavy burden over their shoulders. Thus they proceed round the village and return home *viā* Elpanam.

Now after returning to the original spot they let out these pigs as well as all other pigs, detaining only those that are to be slaughtered on the day for the guests. Then they fell the tremendous *ñā-kopāh* by cutting it with an axe 6 feet above the ground and fence the spot. The canoes and other decorated things also are broken into pieces and the contents thrown in the yards. Only the *merāhta* or iron pike is preserved with its decorations until further orders.

Now comes *yang-hāun*, meaning "in return." A dozen or more pigs of ordinary size will be distributed by the inviting party to the group of performers. They may kill and eat them on the spot or take them away alive to their houses. This is given in place of a festive dinner. The dancing party who receive the above would according to the number of groups kill a few of the pigs, cut them into pieces and distribute the flesh to each family of their group. They roast these pieces and eat as much as they like, and bring the remaining portion to their houses. The pigs that were not killed will also be brought to their village and will be reserved for some public occasion. As a rule, the people who receive the present must be ready to do the same in their turn when the same festival takes place in their village. The returning spectacle of these people, men and women young and old, each with pieces of roasted pork, either fastened to long sticks or strings or in baskets, affords more amusement. The general guests, that is to say of the nearest village, will wait there till the close of the feast to help the party and to give a performance every night. They will take their share of food with the commemorators. The word *yang-hava* is a corruption. The proper word, as far as I was able to ascertain, is *yang-hāun*, or the big boar; because this creature was dedicated for the purpose, and they look upon it as a sacred creature and offer it as a sacrifice in token of the head of the house who died some years ago.

Again, at night they resume the performance with the help of the general guests, and on the following morning they slaughter the big pigs which were carried in procession. It is the custom for these people to wrestle with the pigs before slaughtering them. They then cut them into long pieces, one of which is suspended at the entrance of their houses, as an offering for the devil, and it is allowed to remain there till the next festival. Some pieces will be distributed to their friends and relatives. Of the remaining portion of the pork, they will separate the fatty part and prepare ghee from it by pounding it in a wooden mortar and boiling it in an earthen vessel. This ghee is preserved in cocoanut shells and used in all their meals like butter. They also present a few shells of this ghee to those of their friends who have assisted them. This portion of the ceremony is called *wana-ka-kūa*.

[Elsewhere Mr. Solomon says, "This day is called by the people *kiriam-wana-ka-kūa* (dance for making lard)."]

The above festival is observed for four or five days. Then commences the ceremony of *kisu-ta-d-patti*. On this occasion, they remove all the decorations of the house and dance and sing inside. This is done in order to purify the house.

Then commences the ceremony of *tanang-la-patti*. During this day, the people engage themselves in covering the houses and huts at Elpanam with green cocoanut palms, to prevent pollution of the dried bones. They take their supper at the Elpanam and dance there all night.

Then commences *anul-la-kopâh* or *ul-la-kopâh*, digging the graves.¹ On the evening of this day all the people assemble at Elpanam. The females and children and others stand far off from the graveyard, one or two adults of the commemorators of each house will dig the grave, remove the bones, and throw them in an adjoining bush, called *tang-ngê-kopâh*. But they replace in the grave the skulls of worthy people or heads of families; then they fill the grave with earth and place over it the new *kui-metila* (head-stones). They also kill some young pigs and fowls, and sprinkle the blood over the bones before covering them with earth. The men who dig the grave are called *ta-kucîa*, which means polluted. These *ta-kucîa* will then take a bath in the sea and stay the night in the house of pollution. They will take their supper again at Elpanam and dance all night there. This is called *kiriam hanâla*.

Two or three days after this, they remove the cocoanut palm coverings from the house at Elpanam, and give another performance. This is called *kiriam-nga-rit-droi-ta-okha*. In the morning some sports and a little wrestling will take place.

One or two days after, they invite some of the Mafais of the adjacent villages to give a performance. A grand treat and presents will be given to them. This is called *afai tapôya*, meaning grand *mafai* dance. When this is done they will challenge some other villagers to a boat race, and will have a performance and a treat for that purpose. With this ends the festival of *kana hâm*.

When everything is over they carefully gather all the tusks or jaw bones of the pigs that have been killed in each house during the festive season, fasten them to a long string and hang them up in the public houses at Elpanam for general exhibition. This is done in order to make a comparison as to the grandeur of the ceremony, and the past and present condition of wealth. The festival, however, impoverishes many of them for some years. Some, however, continue to purchase things from merchants, but being unable to supply them with cocoanuts, hide themselves in the jungle till the departure of the traders from the island.

7th February, 1900.—The people of Mûs, having completed their feast of *kana hâm*, for which they had been labouring so hard during the last three months, have now to assist the people of Lapati, who intend to commemorate the same feast next week; they all consequently go to Lapati to help friends, and when that feast is over, the people of Chukchuacha and Arong will in turn follow suit. Thus they have endless work at this season.

5th July, 1899.—This morning, accompanied by Offandi and Ibrahim, I went to Kenmai . . . A curious custom is observed by the people of this island. Once every nine or ten years, the people of certain villages carry away all their pigs and keep them in styes in the jungle. The land thus vacated is then offered to

¹ Elsewhere *kiriam anul-la-kopâh*, dance for digging graveyards.

the public for cultivating vegetables and fruits. The people from other villages then go there and make vegetable gardens. This is called an open garden as they do not fence it, there being no fear of pigs causing damage. Their reason for so doing is that they hang up a large quantity of varieties of yams and other garden produce in the *ñā-kopāh* as a sacrifice for the dead. These vegetables and fruits are scattered in the village when they cut down the *ñā-kopāh* on the day of *kana hāven* and grow abundantly around their houses. It is on account of this they have introduced this custom. Now it is the turn for the people of Tapoiming and Chukchnacha to vacate their land because they commemorated their feast a few months ago. People from almost all the villages went there and spent several days in making a garden.

26th July, 1899.—The people of Mūs have erected in the village two huge *ñā kopāh* (sacrifice for the dead) in the village to denote the approach of their feast, which they attend to commemorate in honour of the people who were drowned when returning from Chowra in November 1897. The feast will probably take place in January next.

27th May, 1897.—This day is called by the people *Ma-raōng-ren*, or day of preparation for the feast of *Kī-alah*. They brought poles from the jungle, tied them round the houses at the Elpanam and covered them with tender cocoanut palms, and prepared new cooking-places below each house. They also decorated the interior of the houses and compounds very tastefully. From 6 p.m. to 6 a.m. the women were engaged in preparing *kur-surah*, a kind of confection, made of yams, raw and ripe plantains, cocoanut and oil; while the females were thus employed, the men were engaged in singing songs in honour of the Chowra canoes. These canoes were kept during the whole month under the houses in the interior. But they were brought to the Elpanam this morning, given a sea bath, and decorated.

28th May, 1897.—This was the day of *Kī-alah*. The proper meaning of the word is to "take food." From morning to evening the people were engaged in feasting their guests, in dining together in groups, and in sending prepared confections and other food to their friends and neighbours; some slaughtered pigs, others fowls. At about 12, a cry of joy was heard from each house:—"Let our house be enriched with plenty of food. Let us have many eatable things from other villages. Let there come new women to our villages. Let us be happy." This was a very happy day for them, for they consider the *Kunsurah* is one of their greatest delicacies.

29th May, 1897.—This is a day of *Anoila*, day of rest for the people.

30th May, 1897.—This day is called *Chuh-angpu*¹ or *Ha-chu*. They took back the devil that was brought last month from the forest, and on their return engaged in hunting after jungle pigs, with the help of dogs.

31st May, 1897.—This is another day of rest for the people. The day was stormy.

1st June, 1897.—This is a second day for hunting pigs, and the following day

¹ Not recognized.

again a day of rest. Thus the festival closed with three hunting days and three holidays.

16th June, 1899.—From the beginning of the month and up to date, it has rained continuously and the weather has been gloomy. The people have prepared a number of *Māya* and erected them near their huts in order to attract the sun. They call these *Kentūla*, which means "come sun."

19th June, 1899.—The feast of *Kaneng-ta-oīn* is commemorated by the people of Tamalu, Perka, and Malacca. This is the same as that of *Kunsurah* (New Year's Day), commemorated by the people of Mūs; but the difference is that they place a miniature canoe on the beach, upon a temporary stand, to denote the departure of Burmese vessels and their desire for the arrival of Mahomedan vessels.

17th October.—This night, as I was about to take my meals, I noticed an obnoxious smell carried by the north-east wind. The whole house was filled with it and so was the whole village. It continued for some hours. The next morning I inquired of the people here the cause of this smell. They say that it is customary always at the change of the monsoon and call it *nān*. Some of them say that it is caused by some huge fish being delivered of young.

1st April, 1895.—This morning a Nicobarese and a Burman who had had a dispute came to me. The Burman had married the Nicobarese man's sister, and the complaint was that the Burman would not give presents annually in consequence. The Burman's story was that the Nicobarese had consumed the pigs and fowls belonging to him to such an extent that he had been obliged to send the girl to his house at Moulmein, as there was nothing left to eat. Finally I settled the matter by dividing between them the pigs and fowls left over, and afterwards I found them on as friendly terms as ever.

On the whole the Burmans do well to marry Nicobarese women. There are disputes at first, but in the end it benefits their trade immensely.

I went to Lapati and Kenmai this evening to witness the curious ceremony of *Dramāl*, covering children with pig's flesh. This is held in honour of the return of youngsters from their first visit to the island of Chowra. The Car Nicobarese look upon Chowra as a sacred shrine and on the men of Chowra as doctors and priests, and as even more terrible than the witch who brings on elephantiasis. They say that Chowra is their original home.

16th March, 1901.—The people here (Arong) were engaged in commemorating the feast of *Hana-Huga* in honour of the safe return of their people from the island of Chowra. It appears they were a day or two late in returning, consequently their relatives were much alarmed. There came forward two Nancowry men, who came here a month ago in a sailing vessel, and promised to cause the safe arrival of the expedition by sorcery, and made a number of "Wanil Kui" for that purpose and placed them in all the corners of the village. "Wanil Kui" means head ornaments, made either of tender cocoanut leaves or of split wood marked with black and red paint, and resembles a spear in shape.

They decorated the race canoes gaily and gave several cheers before they started. They also adorned a few little boys, who accompanied them to Chowra, with a fancy crown on their heads, a fancy whip in their hands, and covered their bodies with festoon of pigs' flesh, and broke a number of eggs on their back, and had them bathed in the sea. This they call *Dramál*. Thus it continued till 6 a.m. the next day. They were so noisy throughout the night that I never had any rest. I was unable to converse with any of them, because on occasions like these they are beyond themselves in every respect, but I visited only the headman of the village and the different shops. I left Arong at about ten o'clock and reached Mûs in the evening.

5th June, 1899.—This is a festival day for the people of Mûs, Kenmai, Lapati, Tapoiming, Chukchuacha and Kenuaka, said to be the New Year's Day of the Car Nicobarese. They call the feast *kunsurhu*, on account of a kind of confection they prepare, called *kusuhu*. This feast is commemorated by them for ten days beginning about 1st June.

12th July, 1899.—The people of Mûs, Kenmai and Lapati have commemorated the feast of *intô-tissá*. The festival is continued for seven days. At the conclusion of the feast they go for a hunt in the jungle.

25th to 26th May, 1900.—These two days were observed as the harvest or new year's festival days of the people of Mûs, Kenmai, Lapati, Tapoiming, Chukchuacha and Kenuaka. Then commences their shooting season, which should last a week.

7th June, 1900.—The feast of *havanj kew ap* was commemorated by the people of Tamalu, Perka and Malacca. Ever since the feast of *hanel tahoinj*, which took place during last month, all the canoes have been kept below the houses, their outriggers, etc., being unfastened. They now fitted them all up and kept their bows to the sea ready to go fishing at night. They then offered a sacrifice to their canoes, while the women prepared *kusuhu* and other eatable things, which the men were to enjoy on the following morning.

A week after this commences the feast of *ka-áp*, which is commemorated by the people of Kakana and Kemios, being their new year festival. At this feast they decorate two huge trees near the beach named *kenyan* and offer sacrifices to them and dance round them. All the other villagers join in this feast.

A fortnight after this the people of Arong commemorate the same feast under another name, *senny tarail*, which means the setting sun.

5th and 6th July, 1900.—The people of Mûs, Kenmai and Lapati commemorated a feast called *ma-ahu-halka*, which means feeding or offering sacrifice to human shades. The ceremony is the usual one.

1st September, 1897.—The people of Mûs again decorated the beach at Elpanam with long bamboos encircled with leaves, etc. They call it *ma-yah-kur-ka-ma-kah*.¹ It means literally, "Paper is going this way to fetch fish for curry."

¹ *Môya-kua-Kamaka* signifies the decorated bamboos erected along the shore with the object of attracting fish, but only during the fine weather breaks, about April and September.

The sea being calm on the side of Mûs, they could go for fishing safely at any time, and the above is a token it, and they think that by seeing these long decorated bamboos more fish will be caught.

31st October, 1897.—The people of Mûs and Kenmai, as usual, received general orders from the Miluanas of Lapati, and have placed the decorated bamboos, *Ma-ya-kuv-ka-ma-ka*, again on the beach at Elpanam with the usual ceremonies, and removed them on the fourth day. They then feasted the Chowra canoes by killing fowls and offering sacrifice to them. As a rule they offer sacrifice to these canoes thrice in each month, viz., first, on seeing the new moon, second, during full moon, and third, at the waning of the moon.

On the fifth day every one of them went into the jungle to hunt.

25th October, 1900.—The feast of *maya* was commemorated by the people of Mûs, Kenmai and Lapati. This is a three days' festival. On the first day the people in each village commemorated the feast in their own village. On the second day the people of Mûs and Kenmai go to Lapati and feast together. On the third day the people of Lapati and Kenmai come to Mûs and feast together. The *maya* (a decoration erected on the beach) is then removed.

10th March, 1899.—The people of Malacca commemorated this night a curious feast; that is to say, feeding human shadows, and have for that purpose invited their friends and relatives in all villages.

16th December, 1898.—The north-east monsoon commenced. The wind is strong and the sea very rough along the east coast from Mûs Bay to Malacca, and most of the people became seriously ill. The people in all villages have performed the ceremony called *tanangla*,¹ signifying either "support" or "prevention." They fenced the Elpanam with chawat (palm) leaves and tied festoons made of different shrubs and herbs in all the pathways and at the entrance of their houses. They also prepared huge human-shaped images by twisting cocoanut palms to wooden logs which they placed round their houses. This is to prevent the illness caused by the north-east monsoon. Poor Nicobarese! They do the same thing year after year, but to no effect. The people of Lapati perform the ceremony more strictly than other villages, but the people of Mûs perform it in a perfunctory manner.

19th December, 1898.—A woman, mother of three children, died during the night after a prolonged illness. The ceremony of *fôh-ta-elmat*,² which generally takes place on the fifth day, was postponed till the end of the month because they cannot do that until they remove the *tanangla*.

8th August, 1897.—The people of Mûs, Kenmai and Lapati commemorated another ceremony called *Kanel Tawui*. They decorated long bamboos by rolling them with different kinds of leaves and fixed them in the centre of the village. As it was raining continually for two or three days, this measure was taken. *Kanel Tawui* means a rod inviting the sun to shine. *Tawui* means "come sun."

¹ *Tanangla-patti*.

² Also *Panôh-ta-elmat*.

19th August.—This was a fine day. The sea was calm at Mûs Bay. From the day of *Katap-hang*, or lighting festival, which took place in April last, all the ordinary canoes of the people were taken away to the interior of the village and kept underneath the houses. They have now brought them all to the beach at Elpanam, tightened and fitted for use.

20th August.—This was also a fine, calm day. The people of Mûs, Kenmai and Lapati celebrated another ceremony called *Ki-alah*, which means fetching food or flesh. At about nine o'clock in the morning, the men went in their canoes with fishing lines and hooks for the purpose of fishing and returned in the evening, some with a large quantity and others with smaller loads of fish. Those who were not able to go during the day, went at night and caught fish. Immediately after returning to the shore, each one of them offered a sacrifice to the canoes of a mixture of chopped fish and different other stuffs, and applied the paste to the canoes. The fish which they brought were fastened to bamboo spits, roasted and stored carefully in their houses.

21st August, 1898.—This morning all the people assembled in the big houses at Elpanam and there partook at a collective dinner of roasted fish and other dishes. They did not attend any other work during this day, but were sleeping till nearly evening because it was a holiday, *hanoila*.

23rd August.—The people call this day *Enwan-nith*, which means fishing again for children. As a rule, the fish that was caught the other day was consumed at the collective dinner. The men therefore went again this day to fish and returned in the evening. The fish they caught to-day was carried away to their houses. The following day also was a holiday for them.

25th December, 1898.—This being Christmas Day, I invited the headmen of different villages and the parents of my old and new boys for a treat, and it was arranged by Offandi that a Nicobari performance was to be given at night in my compound. Unfortunately, another death took place the same evening. The chief men of Mûs, however, ordered that the burial ceremony be performed then and there, so that there might be no interruption to the festival. Accordingly, the guests, about two hundred in number, assembled and partook of the feast, for which purpose I had slaughtered two goats, and they also gave a performance as proposed by Offandi. It is the custom of the Nicobarese not to have any singing or dancing in the village until they perform the ceremony of *fôh-ta-elmat*.¹ But in this case they had set aside that practice.

8th April, 1896.—This night the ceremony of *nâ-ap*, viz., feeding the race canoe with fowl's blood and flesh, took place at Mûs till about midnight with the usual songs and ceremonies.

24th April.—A few men from Pâka came to Mûs in order to invite the people for the ceremony of *Gnunota*² on behalf of the seven men of their village supposed to have been drowned in the sea on their way home from Chowra. The invitation

¹ Also *Fanôh-ta-elmat*.

² Not recognized.

went out to all villages; but the people of Mûs were unable to accept it as they had not as yet performed the ceremony of *fota elmat*, or shedding tears for the man who had lately died.

25th April, 1896.—In company of a few Nicobarese friends, I went to the village of Sawi and visited several friends, including Crow, Tom Distant and Little John. The latter was engaged in preparing for the ceremony of *lwi-mitila* (making a tomb-stone) for his son who had died a few days before. I also saw in the village there a man named Tual, who was once looked upon as a devil man and as a thief. He was convicted of theft and sentenced to two years' imprisonment at Port Blair. The people now say that he behaves himself very well and that they are pleased with his conduct.

4th May, 1896.—From this day till the Sunday following, a lot of young men and maids were engaged in cleaning and sweeping out the Elpanam. They were not allowed to touch eatables meant for others nor could they go into the village, as they were considered to be polluted while at this work. This cleaning was in anticipation of a certain annual festival to take place shortly.

9th May, 1896.—There was a canoe race between Mûs and Kenuaka, which was to be the final race of the season.

The clearing of the Elpanam continued till this evening. When it was over the women were engaged in collecting all the broken cocoanut shells about, and arranging them in lines all round the Elpanam and around the houses in it. They then set fire to them all after sunset, singing and dancing in several groups till the following morning. Whenever they feel tired of dancing on these occasions, they feed, the proper food for this ceremony being the jungle crab, which had been carefully collected for the purpose during the week. On this occasion also they place a spittoon made of Chamam leaves in the centre of each group, into which go all the cheroot ends and the quids of betel-nut for fear that they should pollute the ground of the Elpanam, which is now purified and fit for the habitation of devils. During the dancing the men cover their loins with a wrapping of plantain leaf, which makes them look like Andamanese women. The women run about all night keeping the cocoanut shells alight.

The above is the Mûs ceremony. At Lapati it is more strictly and brightly performed. The spacious square formed by the Elpanam is thoroughly cleaned, and the huts and fencing of the traders in it are dismantled, separate places in a distant jungle being given to them. They then fix in the centre of the Elpanam an iron pike and cover it with shrubs. Then the Tamiluana and his followers, adorned with jewels and garlands, arrive in a procession, and suddenly pulling up the iron pike and the shrubs, throw them in the sea. They then wash their legs and come back to the dancing place. This ceremony is by way of augury as to the prospects of the ensuing season.

As a rule this feast is observed only in six villages, viz., Mûs, Kenmai, Lapati, Tapoimig, Chukchuacha, and Kenuaka. The people of Tamalu, Malacca and Kakana content themselves by joining the above villagers, chiefly with those of

Lapati. This being the chief village of the island, the orders to begin the feast are issued by its headman. The people of Sawi, Arong and Kemios will have nothing to do with this feast. I went over to Lapati and Kenmai purposely to see it, and found it to resemble somewhat the *Dipavali* feast of the Marwaris of India.

10th May.—Early in the morning, about five o'clock, the performances were closed, and after a number of women collected and swept out the Elpanam yard again and threw the ashes and other rubbish into the sea. The men in an excited way took the outriggers and poles out of the canoes (first out of the Chowra canoe) and placed them beneath the houses and covered them with cocoanut palms, while some were carried away to the houses in the interior. They then took all their portable property, including the pots, from the houses at the Elpanam, closed the doors and marched off to their own houses in the interior. Only those who were sick and one or two attendants and those who had dug the last grave were left behind at the Elpanam. Silence has now to be observed for a full month; no fire or light may be seen; no cheroot may be smoked. Women and children are interdicted from coming to the Elpanam, and if they have to come during the night on urgent affairs (to purchase things) they have to place a light at the entrance of the Elpanam and then come without noise. But I am thankful to say they did not make any objection to my keeping light and fire in my hut, although most of them came and spent some hours with me daily after dark. Some of the women, however, asked me how it was that I kept up a light during the night. "Won't the devils get angry with you?" I told them that I was a Tamiluana and that the devils could not come near me as they were afraid. Some anxiously inquired if I had ever seen the devils, and many other such questions.

The people cannot give any account of the origin of the feast. Some allude to "custom" and others say there are so many devils now at the Elpanam. Others say that the devils from the jungle visit the place at this season. A few call it the *Ki-alah*, i.e., monsoon festival. It appears that thirty days later on they will make a grand feast to feed the devils and send them back to their respective abodes in the jungle. The chief sufferers by this festival are the Burmans; because the people cannot supply any nuts nor can they work in making *kopra*, for the reason that they cannot go into the jungle to fetch nuts nor can they come to the Elpanam. Whatever balance, therefore, that may be due must be collected at the next visit. The Nicobarese now look for vessels from Calcutta, Chittagong and Negapatam, which they style *Cannanore* and *Cholia* ships. The traders in these will buy only ripe cocoanuts, and a number must, therefore, be reserved against their arrival. So there is a commercial as well as a religious reason of the fear of the jungle devils at this time.

14th May.—Old Friend of England came to me, and after chatting awhile eagerly asked for some medicine to entice a certain woman to marry him. The poor old fellow has been trying to get married for the last six or seven years. He tried the widow of Jack Williams, formerly headman of Mûs, but she went blind. He then tried several other women, but they all refused him because of his age.

The Burmese and other traders take advantage of the belief in aphrodisiacs to bring strong scents, like sandal wood or jessamine oil, and sell them in drops and very small quantities at a very high rate.

23rd May.—At midnight a man died in the village and was brought to the dead-house at the Elpanam. The people said that they were very much afraid on account of the devils, because they could not sleep in the houses at the Elpanam nor could they go back to the village after carrying a corpse. So they came and remained till morning in my hut. The deceased had been ill only two days, from fever, and the death had happened in the village. These two facts greatly increased the fears of the people. The corpse was buried at the following noon without the usual noise and struggles, and very few people attended the ceremony.

Up till now there had remained about half a dozen people at the Elpanam, including a few invalids and their attendants, but everyone of them now left it and went away into the interior for fear of the deceased man's ghost.

24th May.—During the night, after supper, I took a walk into the village and went from house to house to see what the people were doing. I found a fire in front of each house, the doors closed, and the people afraid even to talk to each other. Only a few old men had joined together, in a lonely house, to eat the mourning supper. When they saw me going about alone they were surprised, and asked me if I was not afraid of the ghost of the deceased man.

At noon to-day four young women came from Malacca to Mûs on some affair of their own, and came to my hut and asked me, "Where is Solo?" ("Solo" being my name to the Nicobarese). I replied in Nicobarese fashion, "I don't know." "Then who are you?" they asked. I said, "I am a man." "What is your name?" they asked. I said, "I have no name." All this is in tone with the Nicobarese manners. I then said, "Tell me your name and I will tell you mine." They complied, and then I revealed the fact that I was Solo.

28th April, 1897.—This was a grand festival of the Nicobarese called *Katap-hang*, or lighting the Elpanam. But the people of Mûs did not go through the ceremony, as they did last year, in consequence of the Elpanam being occupied by our party.

The festival of *Kana-haun* was commemorated at Tapeiming, but the people of Mûs were unable to join in it because of the lateness of the arrival of their friends from Chowra.

28th March.—The people of Mûs went over to Tapeiming early this morning and returned in the evening with liberal presents of pork, etc. The men from Sawi, Arong and Kemios, who had come two days ago to get their certificates renewed, returned to their villages this afternoon. During night the elders of Mûs were engaged in composing new songs and in training their youngsters for the ceremony of *Dramdl*.

31st March.—There was a canoe race in the afternoon between the villages Mûs and Pâka, and during night the ceremony of *Dramdl* was performed at Mûs, but a heavy shower interfered with it a good deal.

3rd April, 1896.—During the whole of the day the people were engaged in preparing torches for the ceremony of *Ki-alah* for “multiplying the fish in the sea,” and then started their fishing at night.

5th April, 1896.—There was a busy bargaining in the evening at Mûs for pots and a large canoe which the Chowra people had brought, which is worth describing. In the evening the Chowra people had a feast, each man in his friend's house, and then all the feasters and all the chief men of Mûs assembled at about midnight in one of the houses at Elpanam and amused themselves by singing songs by turns and in partaking of betel-nut and toddy. There they began the arrangements to buy the canoe, exhibiting all the articles intended as the price for it. The bargain was brought to a close at about four p.m., when every one returned home leaving the Chowra men in the house.

As the Mûs men were short of the rupees promised they came and asked me to give them a few, promising to return the value in cocoanuts. I gave them what few rupees I had, and told them that I did not require anything in return, because I also was one of the residents in the island, and that they should consider me as a shareholder in the canoe. They were much pleased at this.

6th April.—There was a great feast given to the people of Chowra by those of Mûs. In each house they killed a young pig for the purpose. At night all the people assembled in a house at Elpanam, dined together and amused themselves by singing songs by turns. The people of Chowra then left the island in the canoe that had been sold by them, for it appears that this is the custom, the canoe being brought back later at another opportunity. The people of Mûs supplied them with a lot of eatables for their voyage.

7th April.—In the afternoon I went to Lapati with Oflandi and David Jones and visited Young Edwin and Chon Frederic, the chief men of the village, in their houses, and found the whole of the villagers busily engaged in performing the ceremony of *Dramál*. So both my Nicobarese friends of Mûs had a fine treat.

17th April, 1896.—The ceremony of *Dramál* was held in the evening in honour of the safe return of the people who had gone to Chowra. Mr. Dobie and I were present.

10th and 11th April, 1900.—A man named Talusinyi, of Mûs, about fifty-five years of age, died at noon of the 10th instant after several months' illness. His remains were interred on the evening of the following day. The deceased was a man of some repute and consequently the burial ceremony was performed on a grand scale. Men from all the villages round came over. There were sixteen *Takuei* or mourners who bore the body. As soon as the corpse was handed down from the dead-room the bearers carried it nearly half-way towards the interior village, and it was brought back by a band of other men with much show of force. There was a good deal of wrestling over the corpse, which fell on the ground several times, and some of the bearers also received severe injuries. At last it was buried with usual sacrifices.

10th April, 1895.—There was a canoe race going on between the Lapati and

Sawi people in honour of their safe return from Chowra. During the whole of the week there have been races for the same reason in all the villages, excepting Mûs, because their annual expedition failed this year.

27th April, 1900.—Several canoes came from Chowra loaded with pottery, but none to Mûs. The people in their turn went to Chowra and returned.

28th April, 1900.—The feast of *Katap-hang*, or "lighting the Elpanam," took place at Mûs, Kenmai and Lapati, but the people of Mûs did not commemorate the feast in usual manner because their big race canoe got injured in the evening while starting for a race. They therefore kept half-mourning. The poor fellows had only the one canoe for racing.

15th February, 1900.—During night, at about eight o'clock, a Nicobarese of Mûs informed me that a Burman kopra-maker had died at Elpanam, and that the corpse was lying near Kufentenga (a place where the bones of the dead are thrown). I immediately sent my servant to inquire into the cause of his death. On his return he informed me that the Burman had not died but was in a moribund state, and that he was lying near some undergrowth without anyone to help him. I called all the Burmans then and there and rebuked them for their inhumanity, and ordered them to place the man in a proper place and to attend to him.

The reason why the Burmans had treated the sick man so brutally was because they had been informed by a Nicobarese lad that if the patient died in the bazar, no one would come to purchase anything there, or eat food cooked by the Burmans, as this would pollute them.

20th February, 1900.—This evening I went to the Elpanam at Lapati with some Nicobarese friends in order to witness the ceremony of *Anûla* or *Ûla Kopâh* (digging grave). It is an interesting sight. The men who were engaged in digging the grave wore white loin cloths and the women white under-garments, and they are called *Takkuwi* (polluted). The graveyard was screened thickly by cocoanut leaves.

All the big houses at the Elpanam and the cooking huts in the village were also thickly covered so that no breeze could penetrate. Palms resembling walls and four temporary huts were erected in each corner that the *takkuwi* might take their refreshment. Several pieces of white calico and turkey-red cloths were kept in these houses for packing the bones. The graves that are not to be dug were marked by a white curtain and were neatly decorated. While digging the grave, one of the *tamiluanas* stands at the head and keeps fanning with a bunch of "devil-driving" leaves. Another man keeps ready with him a spathe (*chamom*) and a piece of white calico. The grave-digger first takes out the skull, which is wiped by the hand and carefully rolled in the white calico and kept in the spathe; all other bones, from neck to feet, are then taken piece by piece and kept in the same *chamom*, which is carried and placed over big yams that are scattered below the dead-house for the purpose. They then wrap the spathe containing the bones, binding it with red and white calico. About fifty graves were dug and the bones were similarly treated, about five or six bundles of which were re-interred in the same

grave; other bundles were taken away to a place called *Kufentenga* or *Kokenwalaga-Kopéh*, where they open the bundles and throw the bones and tear the cloth into rags. After this the grave-diggers come to the sea and wash their hands and legs while a few only bathe. Thus ends this ceremony.

Ūlla Kopéh was to be celebrated at the Elpanam during the night by the people of Mūs and Kenmai, for which purpose the Elpanam and the pathways were illuminated.

28th February, 1900.—Tekwa was the adopted son of Iskol's father, and was always living in Iskol's house. Eventually he became a thief and robbed the pigs and fowls of the people; besides this, he was supposed to be a "devil-man" or wizard. It happened that a man named Sutro died about ten days ago after suffering for a long time from dysentery and consumption. It was supposed by Iskol and his friends that Tekwa was the cause of this death. Tekwa perceived this and hid himself in a place called Hat-Own. Three days after this, Iskol and his friends, i.e., Natla, Sundran and Nawī, consulted together and brought the man from Hat-Own to a place called Ranai, where, after treacherously giving him tari, they killed him by strangling him with a rope after breaking his joints at his knees and elbows. They afterwards buried the corpse, the same night, in a place called *Kufentenga* (place of pollution) near the graveyard, and on the second or third day they killed two pigs, either as a ransom or as a sacrifice. It appears that Iskol, the headman of Malacca, had been guilty of concealing several other cases on previous occasions because he himself had taken part in them.

A report was brought to my notice by the people of Mūs, that the people of Kenuaka had killed a woman by piercing her with arrows, and had thrown the body into the sea. I then ordered the attendance of all the chief men of that village, as well as those of Tapoiming and Chukchuacha. On inquiry I was given to understand that the deceased woman was the wife of one Choyon, *alias* William Wallace, who came to Port Blair with me in June last for treatment. She was suffering badly from secondary syphilis and was poorly off. But the immediate cause of her death was the untimely delivery of a still-born child. All the headmen testified to the fact, and said that the body was buried in the usual manner, and that everyone of them contributed clothes to wrap the corpse in according to their custom.

23rd January, 1901.—A sad occurrence took place in my house. My wife died this night at about ten o'clock. She had not been keeping good health for about a month past. The senior medical officer saw her when he came here on the 13th and he gave her some medicine. I never expected that this would prove to be her last illness, because she had been moving about as usual and attending to household matters up to the last hour of her death. Her remains were interred on the following morning. Almost all the Nicobarese of Mūs and Kenmai, and a few of other villages, attended the funeral ceremony. They all volunteered to contribute cloths according to their custom, but I declined. I was under the impression that they would expel the devil according to their custom and would

be afraid to approach the corpse of a stranger, but none of them showed such disinclination except Friend of England, who alone performed some ceremony in his compound.

19th April, 1896.—At midnight a crowd of people came from the interior village with torch-lights to the "house of pollution" at the Elpanam and dropped a patient there with a few attendants and then went home. I went over to him and offered treatment, but it was refused, as they said, "We have our own medicines."

A little while after this I heard a noise of singing and hurried out to see what it was about. It turned out to be from two racing canoes from Arong, of which one stopped at Mûs and the other went on to Kenmai, in order to give a challenge for a race. They all came over to my hut and sat there chatting till about dawn, and then went into the village to the houses of their friends.

20th April.—The people of Mûs prepared their canoes and started for the race in the evening after their usual amusements at the Elpanam. The canoe that came from Arong was decorated with plumes of plantain leaves to signify that it was a challenge.

21st April.—The patient mentioned above died this morning and was buried in the evening; but there was a greater commotion at the burial ceremony than I had witnessed hitherto. A portion of the people would not allow the corpse to be carried directly to the grave, but brought it by force several paces away from the dead-house towards the village side. A good deal of struggling took place between the two parties, some dragging the corpse towards the grave and others towards the village, until at last it fell down to the ground between them. The women and children, who stood at a distance from the spot, began to cry out for fear that the corpse should forcibly enter the village. In the end the corpse was picked up and thrown into the grave in a heap, and then the usual sacrifices were offered.

A little before the burial took place, the Mûs racing canoe returned from Arong, but was not received in the usual manner. Two elderly men, who were on the beach waiting, ran down before the canoe could touch the shore, and hurriedly brushed it and the men in it with brooms. They then brought the canoe ashore and fanned it with cocconut palms, so that the deceased man's ghost might not take possession of it.

11th October, 1898.—Information about the death of a man at Lapati received. The man died on the previous evening at about three o'clock. He was an old man of about 100 years of age . . . the landlord of a third portion of the village. The burial ceremony was performed in a curious way; a short account thereof will be somewhat interesting.

The body was neatly wrapped in cloths under a curtain in the dead-room. An open sort of coffin, about 7 feet long and 4 feet wide, was made on the spot, and was fastened by six long, thick, green canes, three on the front side and three on the rear side; each cane was about 60 yards long. When everything was

ready the coffin was drawn inside the dead-room on a sloping plank. The corpse was placed in the middle of the coffin and two women lay on either side of the corpse with their hands embracing it, and thus it was dropped below the house; when the coffin had fallen on to the ground, two stalwart men fell upon the corpse and lay together in the coffin. The large Elpanam of that village was filled by about a thousand people, both young and old, including those who came from all other villages of the island. Of these about a hundred men of the southern villages and about a hundred of the northern villages, caught hold of the long canes on either side and dragged the corpse up and down in competition. The canes were broken several times. Thus they occupied themselves until the grave was ready. At last they buried the body at about six o'clock. It appears that this ceremony is performed only when they bury those in the highest repute among them.

18th April.—To-day there were two deaths at Mûs: one was of a child about two years old. The mother dug the grave and buried the child alone. None of the villagers attended the burial. The father, it appeared, was a Chowra man, who had left for his own island some time back. The woman was not inclined to go with him, as she was a Car Nicobarese. The other death was that of an adult of some consideration. He had been with the people of Lapati to Chowra, and immediately after his return he became ill and died. The people attributed the cause of his death to the witchcraft of some Chowra men, whose displeasure he incurred. The burial ceremony took place in the evening with the usual customs. Many people from different places of the island came in the night and took part in the funeral dinner, many pigs being killed for the occasion in all the houses.

19th April.—This morning the grave of the dead man was decorated and additional sacrifices of chickens were offered. In the evening the people of Mûs, Kemmai and Lapati, with their respective Tamiluanas, went in a procession to the house of the deceased in the interior village, caught his life spirit and took it out to sea.

1st September, 1900.—Last night the people of Mûs went to Chukehuacha with acrostic songs which they composed in honour of a racing canoe belonging to that village.

28th October.—Two large houses of the Nicobarese at Mûs caught fire and were completely destroyed. It occurred through the negligence of a girl, who immediately fled to the jungle. In this case the people do not take any steps to quench the fire but they are careful to protect the adjacent huts by covering their roofs with freshly cut cocoanut fronds.

Here is another curious story. At about noon, Offandi, the headman of Mûs, came to my hut with a paddle in his hand which he was trying to break, muttering at the same time: "I am a very rich man, all this land and everything in it is mine. You were a very poor man and I gave you land, gardens, house, and many other things. You now call me a liar, and so I am angry and I am going to

dig a grave." He repeated this over and over and would not say anything else. I was quite puzzled and could not understand what he meant. I asked him if he was angry with me; he said, "Yes, I am angry; and there is another man." While this was going on, his wife and a number of other men and women came running after him from the village. As soon as he saw the crowd, he hastily broke the paddle in my hut and ran off with the handle to the burial ground and began to dig at the grave of his late father. The crowd ran off to the yard, caught hold of him and tried to drag him out of the place. A regular struggle commenced, while the women began to cry out "We fear, we fear"; others, "Don't pollute us," and so on. The Burmese and other traders looked on from a distance with great surprise. As the matter began to get serious, I went over to the spot and ordered Offandi in a commanding tone to leave the place and come away at once. He then came away quietly enough to my hut and the crowd with him. After some enquiry he said that Friend of England had insulted him, and therefore he wanted to dig the grave of his father and throw the bones into the sea, and added "this man was a very poor man once. My dead father patronized him and gave him land, garden, and everything. But now he calls my father a liar and so he must be punished." I then sent word to all the chief men of the village and told them to come over to my place that night. Accordingly, at about seven o'clock, all the people including the parties to the dispute and the village judge (Kahôka-chin) assembled, and as this was a family dispute, I asked the village judge to enquire into the case and to settle the matter according to their own customs. Then a good deal of argument took place between Offandi and Friend of England. The crowd acting as jurors gave their opinion, and at last the judge made a long speech and pointed out the faults of both parties and ended the case by ordering them to be reconciled! Friend of England apologized to Offandi by admitting his bad language and the latter forgave him, and they all left my place quite satisfied. The origin of the affair was that both Offandi and Friend of England with a few others jointly cleared a spot in the jungle to make a garden. David Jones, a cousin of Offandi and a subordinate partner in the concern, wished to plant only cocoanut shoots, to which Friend of England raised an objection, as he wanted to plant only yams and other eatable things. Offandi tried to intercede on behalf of David Jones under the plea that the land was given to him by his deceased father, and therefore he was at liberty to plant whatever he liked in the allotment. Then it appeared that Friend of England said, "Your father was a liar." Being enraged by this, Offandi said to him, "Shall I dig up the bones of my father and throw them into the sea?" A very great indignity and bad omen to the party causing it. Friend of England, "Yes, you had better." Hence the troubles. I note that part of the cause is that not only Friend of England, but several others, are against Offandi for having given up land to the Government. Some of the Burmese traders told this to me.

10th April, 1896.—Some of the chief men of Mûs went over to Sawi in order to join the people of that village in the ceremony of offering sacrifice in memory

of those who had gone to Chowra and were supposed to have been drowned on the way back.

11th April.—To-day the people of Mûs in their turn killed a lot of pigs and cut down several cocoanut trees as a sacrifice for the missing people. Men from Sawi and other places also came here for that purpose. The Mûs people have taken part in these ceremonies because one man of his village was in the Sawi boat and one in that from Pâka.

11th August, 1897.—The Mâfai of Mûs went to meet the Mâfai of Lapati with usual ceremonies and in procession, and gave a performance in that village.

The whole of the Car Nicobarese take much interest in creating a Mâfai and conducting a Mâfai performance. They spend much of their property, time and labour on account of a Mâfai, and look upon him as a sacred being. It perhaps, therefore, will be somewhat interesting to give a description of the formation of a Mâfai.¹ The word *ma* means "sir" or "superior," used as a respectable term for a man or woman of any age. The chief of the village, the head of a family, also parents, are styled as *ma*. Elderly people call their youngsters by the same term. *Fai* means inspired, quaked or felt; a person who, on the first stage of his recovery from a severe and long-standing illness or from a delirious attack, informs his people that he was inspired or quaked, and therefore desires to become a Mâfai. On this being communicated to the Tamiluanas, they, as well as other elderly people of the village, assemble together in his house, make a formal examination, and say *tufuknu chuatt*, which means sunken eyes. Then they perform a preliminary ceremony called *hañāta*, that is to say, adorning the invalid. The ceremony is performed thus: they spread around his bed devil-driving leaves (fetched from *māl*) and decorate the thatched cane wall of the house at his bed-side with festoons, land tassels, beads, wires, and garlands, etc., and place near him a few decanters filled with toddy, and other electroplated ware. They twist silver wire to his neck, hands, and legs, and adorn him with necklaces, tassels, breast-plate, and armlets, etc., made of silver coins, chiefly two anna pieces, and make him sit in a big, adorned chair, and place a Chinese straw hat over his head. A silver-handled stick (sceptre of Tamiluanas), and a small dagger to kill the devil with, is given to him, together with a bottle filled with toddy, to which is fastened a straw tube to suck the contents through. He is now proclaimed a Mâfai. Information is afterwards given to his friends and relatives in other villages. They all come with presents to meet the inspired man. From this time forward, and until he thoroughly recovers, the people of the village and other friends and relatives contribute his meals and other necessities by turn. This they do on a liberal scale. They have a regular performance every night in the village till about midnight, when they make him sit in a chair in the midst of a dancing group. Sometimes

¹ *Afai* means to undergo the probation and instruction required of those who aspire to the office of *Milūana* (or *Ta-milūana*); *Mâfai* means the probationer or novice.

he will also join the dancing party. This is to increase his strength. Toddy is liberally given to him, which is considered tonic. From time to time they take him from house to house, and village to village, in procession (Pl. XV, 2) (sometimes spontaneously and sometimes by special invitation) and give there a performance. They never make him walk, but carry him in a *Kantēra* (a chair), which is in the shape of a palanquin, covered with different sorts of chintz, and adorned with silver spoons, forks, and soup ladles, etc. The palanquin is borne by about a dozen strong men. The people venerate him much and take him at midnight to all sick quarters that he might heal them by his touch or shampooing, and he pretends to remove gravel or stones from the body of the invalid whom he shampoos. This is done until the Māfai think that he is strong enough, and able to work for his food, when, by the approval of the Tamiluanas, he resigns his Māfai-ship with a final ceremony called. *Tuīnla Māfai* (undressing the Māfai). The same man eventually becomes a *Tamiluana*, which means one who runs after the devil. The same man becomes *yōm āp* and *yōm Elpanam*: i.e., is grandfather or guardian of Chowra canoes and guardian of Elpanam.

15th August, 1897.—During the night there was another grand ceremony at Mūs. The Māfai of Lapati, with his party, came to meet the Māfai of Mūs, with a congratulatory song specially composed for the occasion. The people of Mūs slaughtered several pigs to feast them, and despatched the party on the following morning with liberal presents.

18th August.—This evening I went to Kenmai on a general visit, but was not able to converse with anyone, all the people were fast asleep. It appears they went to Arong with their Māfai on the previous day, to give them a performance and returned home this noon. The spectacle of a returning Māfai and party is very comical. Everyone of them being fully intoxicated, and, besides, much fatigued after the night's exertions.

9th September, 1898.—I should like to mention a little about At-tana. He is a *Saōk-Kūa*, which means shy-faced, delicate or weak person.¹ There are many persons of this distinction in the island. These men will not eat any food cooked by others, nor will they use well water. They will not eat the fowls and pigs reared at home, as they consider all these unclean. If they require fresh water, they will use either rain or the water of the stream that flows in the jungle. They will not drink the toddy drawn from the trees near the village, but draw it themselves from trees far away from the village. They will, however, be glad to take bread, biscuit, and rum from others. As for rum, they will not drink it in a glass, but in a new coconut shell. Men who do not observe such differences are styled *Tat-saōk-kūa*, which means not shy-faced.

13th February, 1899.—The ceremony of *Ta-nūin-la*² (*ex māfai*) was performed by one Davidson. This young man, as well as his late brother, were in the Orphanage at Port Blair for a long time and they are much indebted to the

¹ An error; the meaning is dainty, fastidious.

² According to Mūs, Kenmai and Lapati and Sawi. Other villages employ different terms.

mission in many respects. Davidson was suffering for a short time from cough. The Miluanas of the place urged him to become a "Māfai," but I objected to it. They, however, succeeded in persuading the boy and made him a "Māfai" without my knowledge. But by advising him over and over again he has resigned his Māfaiship earlier than the usual period, and is now behaving properly. He is sorry for having acted contrary to my wishes.

4th August.—I went this morning to Lapati and visited a few of my Nicobarese friends. The people were engaged throughout the night in the Māfai dance, going to sleep about noon.

5th August.—There was a Māfai ceremony at Mūs this evening, called *Pamutaga-kūa-māfai* or *amut te kūa*, which means pointing out the invalid. I think it is worth while to give a short account of it. The Tamiluanas of the village decorate themselves in the usual manner and go to a place called *Māl*,¹ which means a point at the northern end of the village. There they clear a certain spot in the midst of a thick bush. They also take with them a few yards of red cloth, a cage containing about twenty fowls, a basket filled with pigs' flesh, and different other things, and hide them under different bushes at some distance from the cleared spot. There, with a number of followers, they lead the Māfai in procession and give a performance. While the party in general are dancing, the Tamiluanas take the Māfai apart from the crowd to one of the bushes and point out to him one of the concealed things, and tell him that it is a gift for him miraculously sent by one of his deceased relatives. Then they come back, and join the dancing party. This is repeated until all the articles are pointed out to the Māfai. The red cloth is then torn into pieces and distributed to the men for loin-cloths. They next bring all the other articles to the house of the Māfai and continue to sing and dance the whole night. What I am able to gather of this ceremony is, that the people consider the spot in *Māl* something like Hades, and that they are under the impression that the souls of the deceased, immediately after expiration, take their abode in the above spot, and consequently they never approach it on ordinary occasions, nor do they take any cocoanuts from that place, though it is thickly studded with cocoanut trees. Whenever a person becomes ill or whenever they wish to expel the devil out of a person, the Tamiluanas first resort to the above spot to consult with their household spirits and bring from there devil-driving leaves. In case of failure they go to another spot in a distant jungle, called *passu* (former settlement of these villagers) where, they suppose, the souls of their ancestors sojourn. There is another spot called *kemcalaga kopah*, or *tang-ngē-kopah*, near the burial ground, where they throw the decayed bones of the dead. This place is considered by them to be polluted. In each village they have similar spots. The ceremony and custom bear good meanings, but

¹ Each village has its *māl* where evil spirits reside, and each village has a place where good spirits only reside, but the name by which these places are known at each village differ. That at Mūs is called *Kātāfa*.

unfortunately their limited knowledge does not allow them to give an explanation of them.

1st May, 1895.—Here is another story about Offandi, the chief man of Mûs. Last night the *māfais* of Mûs went to his house at midnight and, after their usual performance, extracted some pieces of iron and stones from his body, said to have been caused by the devil, by shampooing him!

They also performed the ceremony of *kilong kui* (devil expelling) on the same night in his house. It appears that some of the Tamiluanas, or exorcists, had told him that he was possessed by some evil spirit, and so his mind was disordered, and he himself made frequently ill. The ceremony is worth describing here.

About half a dozen women adorned with garlands went to the jungle in a solemn procession and brought some exorcising leaves, called *ta-kit-tin-huk*. They tied them into three large bunches and hung them up in a decorated spot in the house. A large pig was then slaughtered and its blood rubbed all over Offandi's body and sprinkled round the house. The flesh was cut in pieces and distributed to all those who took part in the ceremony. A garland was put on Offandi's neck and a knife put into his hand to kill the devil with. He was then made to sit under the bunches of exorcising leaves so that they might touch the upper part of his body. A number of Tamiluanas, both male and female, then sat round him, singing invocatory songs in the room, which was quite dark. They fastened a rope to the largest bunch of leaves and twisted it round violently so as to hit him hard. This they did by turns one after another. At each blow the *mīluana* fell down with his face on the floor and called out in a squeaking voice, "Here is a devil." As each devil was caught he was folded up in leaves, and tightly tied together by a special kind of string and then kept in a corner of the house near the entrance. In this way they caught a large number of devils that night. They were finally thrown into the sea before daybreak. The whole village was filled with alarm and shouted throughout the night to prevent the devils found in Offandi from entering their houses and taking possession of other men.

Next day, Offandi was adorned with wire, and a *māfai* stick twisted round with wire was put in his hand. He cannot move abroad until the wire is removed with another ceremony.

Offandi is a rich man and the chief of Mûs. Without his permission no one can occupy land, or build a house, or make a garden. He has, however, no men to work his own garden and he has no pigs. Whenever he requires pigs he buys them with cocoanuts. He makes no profit out of the lease of land.

3rd May.—The *māfai* of Lapati came to Mûs, and gave a performance lasting all night.

21st March, 1895.—During the night there was a grand performance called *tī-lai-nga-uluah* to celebrate the recovery of a *māfai* from serious illness. The wire jewellery with which he had been hitherto adorned was removed from his person.

10th April, 1895.—I went to Chuk-chu-a-cha, and Tapoining. At

Chuk-chu-a-cha I met a Madrasi lad who is now a *máfai* and adorned with wire rings. I tried to speak to him, but he would not open his mouth, and simply passed me by laughing.

20th January, 1899.—To-day a curious ceremony was performed at Lapati in the house of a man named So-na-lan. He is about sixty years old and has lost his molars. Consequently, he gave a grand dinner to a large number of people who came from all villages. The man was adorned with silver wire, etc., from neck to feet and was made to sit in a *máfai's* chair, called "*Kantēra*." This was done in honour of his fallen teeth.

3rd October, 1897.—This night the *máfai* of Lapati came to Mûs and gave a performance. This they call *Ai-yu-a-kare*, which means coming to dinner party adorned with jewels.

1st July, 1897.—This day the people were engaged in performing other ceremonies, which they call *Maya Wanil-Kui*.¹ This means "top decoration." They brought very long green bamboos from the jungle and nicely encircled them with bamboo and cane leaves from top to bottom; they next fixed them around the graveyard at Elpanam with usual ceremonies, being headed by their Tamiluanas and devil-expelling instruments.²

During the three following days they were engaged in preparing two very large comical floating cars in the shape of a canoe,³ and on either side decorated them nicely with two sails made of cocoanut palms and a dry palm leaf torch in the centre, and loaded them with bunches of evil-expelling leaves. All the young men and women were engaged in doing this work, the Tamiluanas and other elderly people being engaged in singing songs by turns in one of the houses at the Elpanam. The latter frequently came down and walked along the beach with their rods and forbade the devil from entering into the village. In this they were engaged both night and day.

The fourth day is called *Intō-nga-Siya*, which means expelling the devil by sails. On the evening of that day, the whole of the villagers assembled at Elpanam, the women with baskets of ashes and bunches of devil-expelling leaves. The leaves were supplied to all, young and old. Then a number of able-bodied men, with a guard of Tamiluanas, carried one of the cars to the sea on the right side of the graveyard and floated it to some distance. As soon as they returned, another batch of men carried the other car and dropped it similarly on the left side of the graveyard. As soon as they were left in high water, the females from the shore threw ashes and the whole crowd shouted out, saying "Fly away devil, fly away, never come again." As the wind and the current were very favourable, the canoes sailed off very quickly. The men then came to the shores and were supplied with fresh bunches of leaves. They removed all the decorated bamboos,

¹ *Wanil-Kui* is the name applied to the carved wooden charms suspended inside huts in times of sickness to keep away evil spirits.

² These remarks refer to *Maya* only.

³ These are called *In-tō*.

one after another, and threw all the leaves into the sea. While removing each bamboo, they expelled the devil with a curious ceremony. These people do everything neatly and systematically. Removing the devil from a person or place and driving the same into the sea or jungle is a most amusing portion of the ceremonies. Any stranger would understand the ceremony to be for some real purpose, but, like children, they can assign no reason for any of their doings, simply attributing it to custom. During the night all the people took their meals in common at the Elpanam, with much joy, because the devil sailed off facing Chowra. This is one of their annual festivals, commemorated only by the people of Mûs, Kenmai, and Lapati, other villagers will have their turn next month, until it comes to those of Sawi.

8th July, 1897.—This night the people of Mûs celebrated another festival in honour of one of their deceased saints. They killed several pigs and fowls and offered sacrifice in the graveyard. It appears some one of the Tamiluanas saw during the previous night the spirit of the deceased. They call this *Ma-la-hal*.¹

8th July, 1897.—This is another festival day, called *Anhai*. Of the two cars floated off the other day, one is said to be a wicked devil and the other a favourable devil of the village. It appears, the latter devil returned back and gave information to the Tamiluanas, that the former had reached Chowra, and in token of it, there was found near the graveyard at Mûs a new Chowra pot, one chicken and a paddle. The people were very pleased and killed more pigs and fowls as a sacrifice to the conquering devil of the village and there was a grand treat in the night.²

28th October, 1900.—This was a festival day for the people of Sawi, called *Ké-siya*. On this occasion they clear a portion of jungle in the interior and decorate the place with cocoanut palms, and from these bring *Siya* the devil, to the *Elpanam*. All the houses at the Elpanam and the yard there are also similarly decorated. The people of Arong and Mûs then go down and give a performance lasting all the night, for which purpose they have been practising for the last month. Other villagers go there as spectators or as guests. The morning after the performance they have a feast, at which the special articles of food are pigs and jungle crabs. When this is done, a wrestling match takes place, and closes the festival. It appears that eight days after this the devil that has been brought from the forest, will be lead back thither, with some more ceremony.

8th May, 1896.—Offandi, Friend of England and a few others of Mûs, came and asked my permission to expel from the Beacon the ghost of the boy who had died the other day. I told them that the Beacon was also a standard erected in honour of Her Majesty the Queen Empress, and that no ghost could get into it. I also told them that if they defiled the Beacon they must not expect the

¹ *Ma-la-hal* = departed spirits of good persons.

² Only wicked devils (called *siya* or *si-tai choich*) are sent away in the *In-tô*. Good spirits (called *mala-hal*) are not sent away. The "favourable devil" here referred to is one of the *Samima* (or permanently resident jungle spirits), who steers the *In-tô* out to sea, that the evil spirits may not return to Car Nicobar.

usual presents from the Queen, *i.e.*, the Indian Government. They then went into the nearest jungle and caught the ghost in a thick bush and threw it into the sea.

26th August, 1897.—The people in general have got their large vegetable gardens in a distant jungle, but for their immediate use they have some smaller gardens near the village. The Tamiluanas informed the people that in consequence of the flourishing condition of these smaller gardens near the village, the devil is angry with the people and may cause the island to be drowned by a deluge and that, therefore, they should pluck up some of the plants; accordingly a greater portion of the yams and other vegetables were plucked up, some doing it willingly, others with discontent.

22nd March, 1896.—During the night some of the chief men of Mûs, Lapati, and Kenmai came and requested me to postpone the fixing of the beacon until the arrival of their people from Chowra, for they said that in consequence of this new work, and of a tree that had been felled down by Mr. Dobie in their grave yard, near the beach, the sea was annoyed and had caused high wind and big surf, in which they supposed that their friends would be drowned at sea. I gave them some sound advice and, after some hours talk, sent them away satisfied.

17th to 19th June, 1897.—During this time the sea was very rough. The waves rolled over the shore, and water to a foot in depth remained below the houses at Elpanam. The same thing happened in all the villages, but to a greater extent at Kemios. Some of the canoes were also carried away into the sea. The people were much afraid and asked their Tamiluanas to subside the waves. The Tamiluanas and their followers, adorned with garlands, walked along the beach in a procession with their devil-killing rods and leaves, and occasionally struck the water, and eventually surrounded the Elpanam with cocoanut palms, and performed other ceremonies.

20th to 23rd July, 1898.—The festivals of "Mâya" and "Intô," *i.e.*, "driving the jungle devils into the sea," were commemorated by the people of Mûs, Kenmai, and Lapati.

25th, 26th, and 27th July, 1898.—The Miluanas of Mûs informed the people that they have seen those people who were drowned lately on their return from Chowra, and that they wanted meals because they died from hunger. They therefore ordered all Mûs people to offer sacrifice. Accordingly the people in each house contributed spoons, forks, clothes and silver wire. They also killed pigs in each house and prepared meals. After the sacrifice had been made the Tamiluanas informed the people that all the souls were satisfied with the meals and other sacrifices, but that "David Jones," who was the leader of the unfortunate party, was dissatisfied with their offering. The Tamiluanas also said, that the men of Chowra had a grudge against the people of Mûs, which they did not like to show in the island, but caused them to be drowned while at sea by means of witchcraft, whereby a tempest was raised during their return voyage. The people believe all these stories to be true.

8th May, 1899.—I arranged to be absent from Mûs and to spend a few days in visiting all the villages and people in the Island. I accordingly started early this morning and went to Kenuaka. Some of my friends at Mûs, and also Davidson (formerly an orphanage boy), with his newly married wife, accompanied me. Whenever Nicobarese go abroad, women must accompany them, to serve out folded betel nut and cheroots.

We reached Kenuaka at nine a.m., and halted in the house of Corney Grain. Here I was taken to the house of a man who was suffering from dislocation of the wrist, caused by strain at paddling in an expedition to Chowra. The people thought that he was bewitched by Chowra men, and were performing some sort of ceremonies over him. I gave him a little relief, which allayed the fears as to the witchcraft of Chowra.

28th October, 1900.—An important *punchayat* was held in one of the houses at Mûs to enquire into a case of defamation. A man named Talu-sin-yan-ma died some months ago from old age after a long illness. His son and other members of his household were led to believe that the man had died owing to witchcraft, of which two men were accused, viz., Longti (or Pop) and Rowngen (the latter is a native of Tamalu, and was expelled thence for a similar cause). He was also once before brought to me accused of witchcraft. The first named person is a native of Mûs, and a relative of the deceased. Longti now charged Talu-sin-yan-ngiyi with having disgraced him thus. Three pigs were then slaughtered by accused and distributed to the people.

10th July.—Corney Grain, headman of Kenuaka, and some other men of that village, came and reported that a man named Pin-re-ta had set fire to his own house, and had committed suicide by throwing himself into the flames. I went to Kenuaka on a subsequent date and enquired about the cause. They all concurred in describing Pin-re-ta as a good man, as very rich, and as having no enemy in the village. He was not a married man, and he had only one servant boy. I enquired of the servant boy, he stated that on the day of the occurrence he was sleeping in the cooking hut when suddenly he heard a sound as of a pig being beaten. On his coming down to see what it was, he saw that the pig house was in flames, and that Pin-re-ta was standing below, and that he had killed one of his big pigs with an axe and threatened to kill the boy, who thereupon ran off to the jungle where the people were engaged in making a garden, and informed them what had happened. The people then, about forty in number, came in a crowd and found that the man had died, and that both the house and the hut were burnt.

26th to 31st October, 1897.—A boy about fifteen years of age fell down from a cocoanut tree and was seriously hurt. The people took him immediately to the dead house, thinking he would die, and placed round his bed the devil-driving leaves and other things which they generally do for a dying man.

27th August, 1897.—There is a woman ill for the last year. I went to her several times and asked her if she were willing to take medicine; her reply was

"The devil has caused this illness to me, it cannot be cured by medicine. The Tamiluanas only can cure me by driving the devil out from me." She prefers sugar and biscuit to medicine.

15th April.—During the night there was a singing party in one of the houses at Mûs in consequence of the success of the inmate in recovering a strayed pig.

27th August.—Some people of Mûs went to Tamalu in a canoe for some purpose or other, but the canoe was broken by grounding. The men on their return home killed a pig and distributed the meat to all their friends and thus gave notice about the loss of the canoe.

28th August.—This morning a little child fell from her house but escaped unhurt. The parents killed a pig and distributed the flesh to all their friends in token of their thankfulness.

16th July, 1898.—Corney Grain and four other men of Kenuaka came and complained against the people of Tamalu, saying, that the latter had destroyed a large number of cocoanuts by felling them from the trees in the garden in the interior, whereby they are put to a great loss and are unable to supply the demands of the traders for some time.

I sent for the people of Tamalu, with the head men of the surrounding villages and inquired into the matter. It appeared that the people of Kenuaka had lost some of their dedicated pigs, which had been kept in the interior. They having suspected some of their fellow-villages, who generally reside in the jungle huts, rebuked them and told them to shift to their village homes. These men were annoyed at this and informed the people of Tamalu, telling them that Corney Grain and others were accusing the people of Tamalu of stealing their pigs. The men of Tamalu were enraged on hearing this and cut down the cocoanuts from about two hundred and fifty trees, which were on the boundary of the Tamalu jungle, and which were the property of the former, and they forbade the men of Kenuaka to take nuts from those trees, and they placed landmarks.

26th April.—This evening I went to Kenmai and visited some of the people.

A Burman from Kenmai came with a complaint that, as he was carrying a bunch of plantains as an offering to *Phaya*, a Nicobarese had suddenly and wantonly taken some of the fruit, and had thus defiled the offering. The Nicobarese was a native of Tamalu, and had gone to Kenmai to perform a *mâfai* dance, and even when I saw him he was too drunk to appreciate what he had done. His friends at Mûs, however, brought another bunch of plantains and apologized for him, and with this the Burman was satisfied.

2nd February, 1900.—This night another curious ceremony was performed by the people of Mûs, viz., a man was bitten by a snake about a fortnight ago; his body was swollen and he suffered a little therefrom, but has now recovered. He invited his friends and performed the ceremony of *ke luang-ala*, which consists in waving a lighted coconut leaf torch round his head, after which he slaughtered a few pigs and feasted his friends.

10th April, 1895.—I went to see some of the Burmese merchants who are living to the south of Lapati. Here a girl about seven years old was brought to me, just bitten by a snake. I asked them to take her to Mûs at once for treatment, but they refused to do so, saying that it was not their custom to take such cases beyond the limits of the village.

24th July, 1897.—Information was received about the death of a boy at Lapati by snake bite. The death was instantaneous. The villagers, as a token of mourning, shaved their heads and did not attend to any work for the subsequent four or five days, but they went frequently to the beach and bathed in the sea.

16th June, 1897.—A girl about twelve years of age died at Passa in one of the jungle houses. She was bitten by a snake about two months ago and since then was in bed suffering with swelling all over the body. The corpse was brought from the jungle and buried at Mûs with usual ceremonies.

27th June, 1899.—I was informed of the following by some of the Nicobarese, but cannot say how far it is reliable.

It appears that it was in ancient times their custom to kill men for any offence, either grave or simple. The elders in those days, finding that the population of the island had greatly diminished thereby, held a council and introduced the system of killing pigs, burning houses, felling trees, chopping off the tops of trees bearing fruit, and breaking canoes, and destroying clothes, etc. Evidently the same custom is continued by the people at the present day. They seldom have open fighting among themselves, and they are not in the habit of using their fists or flogging. In extreme cases only do they commit murder.

27th May, 1897.— . . . After hearing the story of the murderer, I entrusted him to the care of David Jones, and told King Fisher to send daily four men from his village to guard him. These people are, however, so feeble that they are afraid to approach him, and are so ignorant that they do not know how to guard him. It is on this account they always kill the men of whom they entertain fear. In the case of this man, they did not like to keep him in any of their houses, thinking that they would be polluted; and so they prepared a strong wooden cage, similar to the one they make for pigs that are to be slaughtered, and left the man in it with his hands tied.

4th September, 1900.—I went to the Elpanam to see the man Chafet. He was being kept a prisoner by means of a bar called *Kuilonga*. I told the people who guarded him to remove the bar and to make a suitable one, so that he might move about freely.

2nd February, 1899.—A Burmese trader named Koyih and his Nicobarese wife came to me with the following complaint, viz., Koyih had married the woman according to local custom about six years ago and had three children by her. But when Koyih went away to Moulmein last year it happened that two young men of the village, named Ha-Kam and Inrelre, gave the woman some trouble for marrying a Burman, and attempted to commit foul play with her compulsorily. One among them is the adopted son of the woman. I called for

the young men with other people of the village and inquired into the matter, when I ascertained the facts. The woman says that she is afraid of the young men and thinks that they will do some further injury to her. I ordered the young men to pay her a fine according to local custom, such as a few pigs, and told them to live in any of their relatives' houses at Mûs for a short period. They agreed to do so.

18th March, 1900.—A man named Davidson, alias Hangtrai, of Mûs, came to me and complained that while he was returning with his wife from Arong, after witnessing the feast of *Kana hâvu*, a man named Hangaich, of Sawi, indecently assaulted her in the presence of a number of people. On the following day, I called up the man and inquired. He admitted the fact and said that he did so through drunkenness. I told Davidson and his friends to deal with the matter according to their custom. They accordingly imposed on him a fine of three pigs, of which two were to be cut up and distributed to the people of Sawi and Mûs, and one to be kept in the house of the insulted woman, as a warning to others.

3rd July, 1898.—To-night there was an eclipse of the moon. The people here are under the same impression as some of my countrymen regarding this phenomenon. They think that the moon is actually being swallowed by a serpent. Throughout the night both the young and old refrained from sleep and occupied themselves in driving out the serpent in the following way. Having provided themselves with kerosine oil tins and planks they beat them and shouted "Alas! alas! do not devour, let the moon alone and go away." It was a comical sight.

The following story shows the theory of the Nicobarese in regard to their origin.

It appears that a certain man of some unknown country arrived at the Nicobars in a flat with a pet female dog, and settled in Car Nicobar. In course of time he took the dog to wife and begot a son, and when this son was grown up, he concealed his mother by covering her up with a *ngong*, a kind of gown or petticoat made of cocoanut leaves. He then killed his father in the jungle and took his mother to wife! From such parents, the Nicobarese suppose that they were originated and peopled the island. The two-horned head ornament, called *tâ-chôkla*, made of areca spathe, which is worn by all males, they consider to be a symbol of their first mother's ears: the long piece of loin cloth, which dangles behind them, they call her tail. The four cubits of cloth reaching to the women's knees only, they compare to the *ngong* petticoat which was her first dress.

Some of the people say that their first father was a dog, and mother a woman. It is owing to this legend that they say that they are sons of a dog. For this reason they treat their dogs very kindly, and never beat them for any cause. They quiet them by simply saying, *hoos, hoos!*

Regarding the abundant growth of cocoanut trees in the island the local notion is this. Once upon a time there was a scarcity of drinking water, and a certain man produced water from his elbow by means of magic. The people therefore took him to be a devilman, and beheaded him. On the spot where the

head fell there sprung up a tree, and in course of time it grew big and commenced to bear fruit, the nut resembling the head of the beheaded man. The people for a long time were afraid to approach the tree or to taste the nut, because it had grown out of a human head, and so by the falling of the ripe nuts there grew up a dense cocoanut grove. Then some wise men among them brought an old man that was dying and made him taste the fruit to find out its qualities. The old man accordingly ate one and found it to be very delicious, and from continually eating it he became very strong, and appeared like a young man. Thenceforward the people began to make use of it.

The object of fencing their houses and pathways, and covering the canoes with cocoanut palms, and felling a number of cocoanut trees immediately after the death of a person, is to prevent the ghost from entering the village: hence on the third day after the occurrence of a death, they fasten tender cocoanuts to three bamboos and fix it in the graveyard, and decorate it with young palms. They also cover the entrance of the house of mourning with young cocoanut palms and sprinkle pigs' blood over it as a sacrifice. They wash also the dead body with cocoanut water. I have an idea that their habit of murdering persons supposed to be "devils" has something to do with the destruction of an evilly disposed ghost.

SIX WEEKS ON CAR NICOBAR. Notes by Mr. A. L. BUTLER, Ornithologist.

The opportunity kindly given me by Colonel Temple of visiting and for a time residing on one of the Nicobar Islands, being to a naturalist a chance too good to be lost, I started from Port Blair on the *Elphinstone* on August 6th, 1896.

We landed on Teresa, Camorta, Nancowry, and Kachal, and on the 19th the ship touched at Car Nicobar, to drop me before returning to Port Blair.

One day a deputation came from one of the villages, Kakana, I think, to ask me, through the medium of Mr. Solomon as interpreter, to come with my gun and capture or shoot a man who had run *amok*. They complained that he had fired a house and killed a lot of pigs with his dah and threatened to cut down the first man who interfered with him. On inquiry as to whose house he had set fire to, they said his own. Further questioned, they admitted that the deceased pigs were also his own property. I came to the conclusion that a punitive expedition was unnecessary. I never heard anything more about this case: but it curiously showed the Nicobarese view of the occurrence.

The marriage relations are apparently very loose. As long as a couple are fond of each other, and agree, they live together; if they get tired of each other they separate and marry again. There seems to be no objection to an unmarried girl having as many lovers as she likes.

Davy Jones is living with two sisters. The Nicobarese do not seem to approve of this, but as usual, no one interferes.

There is generally some sort of festivity going on, principally canoe racing and dancing. A pair of the large racing canoes from Choura, each manned with twenty-five or thirty men, make a fine sight. The course is generally long—probably Mûs to Malacca, or *vice versa*; and as they sing at the top of their voices throughout the race, they are pretty well exhausted at the end. Both canoes keep nearly parallel and they do not seem to mind much which comes in first.

Dancing is carried on every fine night, the performers making a large ring with their hands on each other's shoulders, the men on one side and the girls opposite them on the other. They do not dance round, but take two or three paces and a stamp to one side and then to the other. If the dancers are few in number the ring is left one-third open rather than made smaller. Toddy goes round freely, and by midnight everyone is more or less intoxicated and consequently fuddled and stupid next morning.

Wrestling is rather a favourite sport between the lads. The rounds are very short, one or the other going down at once.

The Nicobarese did not seem to me to be very good fishermen. I did not see a single fish of any size captured during my stay. I noticed four methods of fishing, by hook and line: netting with a small casting net, attracting fish at night with torches and spearing them, and killing the small fry left in the pools at low tide by an intoxicant made by mashing up a jungle fruit which I could not name.

Throughout my stay Mr. Solomon gave me much help in various ways, and I found his boys far superior to the general run of Nicobarese in intelligence, as well as appearance.

The Nicobarese keep a few cats but no great number.

NOTE ON A TOUR OF INSPECTION THROUGH THE NICOBAR ISLANDS WITH Mr. G. F. PREVOST, Conservator of Forest Tennasserim Circle, from the 19th to the 26th March, 1897. By Mr. E. M. BUCHANAN, Extra Deputy Conservator of Forests, Andamans.

We made a good many useful notes in this village (Sawi) on canoe-building, and learned that the hulls of all the large canoes were brought up from Nancowry, or from the Great Nicobar.

Firewood.—The natives burn cocoanut husks instead of firewood, but there are lots of small trees in the scrub capable of supplying a certain quantity of fuel, if necessary.

Structure of huts.—The main supports and the floor beams of each hut are of timber.

The lighter parts of the frame-work, especially of the conical roof, which is the main portion of the building, are made of the mid ribs of cocoanut leaves, or thin laths of areca palm.

The latter are also largely employed in the laying of the floor. The walls and floor, which are of open work, are carpeted with the broad sheath-like petioles of the areca *catechu* leaf.

The roof is heavily thatched with *thede* grass. Little bamboo at all is used in building. There is, in fact, far too scanty a supply of bamboos in the island for general use.

The houses have not a nail nor a peg in their structure. The joints are very neatly fitted and tied with cane whips. The largest houses must be at least 30 feet high and over 60 feet in circumference; yet they appear to withstand all the gales of the changing monsoons.

Canoes.—The Nicobarese canoes are light, shapely dug-outs, made from the hollowed trunks of *Callophyllum spectabile*, which are brought up from the Great Nicobar. The bow pieces, thwarts, and other fittings are made locally out of hard woods like *Corallia*, a high forest relation of the mangrove. The paddles are made of *Garcinia speciosa* and *G. Kydia*. The only preservative on the outside of the canoes seems to be the charred skin, produced by rapid burning.

The outriggers appear to be of *Stereulia alata*, a very light soft wood.

The so-called "bread fruit" of the Nicobars proves to be the fruit of the *Pandanus leram*, which bears no kind of relation to the South Pacific "bread fruits." The latter is an *Artocarpus*. The Nicobarese treat their "bread fruit" to a process of boiling and washing, and so obtain a mealy form of bread.

Local Manufactures.—Under this head there is nothing worth noting. The Nicobarese appear to produce for themselves nothing but the bare necessities of life, and obtain by barter from traders all luxuries, from the ingredients of their indispensable *pan*, to the remnants of foreign apparel which they clothe themselves with.

NOTES ON CASES IN PORT BLAIR OF CONVICTS SENT THERE FOR CRIMES IN RELATION TO THE DESIRE TO PROCURE SONS.

BY COL. R. C. TEMPLE, C.I.E.

I.

Life-convict, No. 14,114, Musst. Begi, was received in the Penal Settlement of Port Blair on the 2nd December, 1895, and died there on 14th June, 1897. She was convicted of murder on 5th May, 1893, by the Sessions Court of Jullundhur, Punjab. She is described as aged about 40 years, and as the wife of Shadi Shah Faqir, of Daboli. With her was charged Musst. Amiri, wife of Dallu Shah Faqir, of Daboli, who was her daughter.

The mother and daughter were convicted of murdering a *female* child named Begam, age about 3, on March 2nd, 1893. The conviction was based on the confession of both the women, corroborated by other evidence. The point of the confession for the present purpose is this. Musst. Begi had been told by a *faqir* that if she killed the eldest son or daughter of some one, and bathed herself over the body, she would have a male child, and it would live. Accordingly one day, as the child Begam was playing near Begi's house with Begi's own little daughter, Mamon, Begi and her elder daughter, Amiri, took the child to Begi's house and cut

her throat with a knife. The body was then hidden behind an earthen *kothi*, and next day it was buried in a corner of the house. On the day following, the body was taken by Amiri to a barley field near the village pond, and Begi, who had accompanied Amiri, bathed herself over the body and then threw it into the pond. But it would not sink, and so it was taken out and left in the field where it was found.

II.

Life-convicts, No. 16,663, Musst. Kuri, and No. 16,664, Musst. Paro, alias Dhapo, were received in the Penal Settlement on 15th November, 1897. They were convicted of murder on 27th February, 1897, by the Sessions Court of Saharanpur, N.W.P. Musst. Kuri is described as aged about 40, and as the wife of Nabia Shekh, by caste a weaver, of the village Mala, in the Muzaffarnagar district, and by occupation a midwife and Mussulman beggar. Musst. Paro, alias Dhapo, is described as aged about 28, and as the wife of Hushnak, a Hindu Jat, of the same village, and by occupation a cultivator. In this case four persons were tried: two men, Jaidyal, Jat, aged 36, and Gordhan, Baniya, aged 32, and the two women above mentioned; *i.e.*, three Hindus and one Mussulman. They were charged with the murder of a Jat boy named Qabul, aged 6½ years, in their village.

The evidence showed that the boy had been strangled in Jaidyal's house. In the sequel Jaidyal and Gordhan were hanged, and the two women were sent to Port Blair for life. Musst. Kuri died on 23rd December, 1898.

The motive for the murder was, at the instigation it was alleged of a sorcerer, to preserve Musst. Dhapo's male child. She had lost several children and had left alive a girl and a boy about 10 days old at the time of the murder. An objection to its being a ritual murder was raised during the trial on the ground that, had it been one, the *syana* or sorcerer would have been present, and certain ceremonies would have been gone through with needles and sandal-wood, etc. The *syana* on the occasion was arrested, and belonged to the Mali caste, "which supplies sorcerers largely."

III.

Life-convict, No. 16,414, Musst. Jio, was received in the Penal Settlement on 23rd October, 1897. She was convicted of mischief by fire on 4th May, 1896, by the Sessions Court of Saharanpur, N.W.P. She is described as aged about 30, and as the wife of a chamar in the village of Sampla, and by occupation a labourer.

She was caught in the act of setting fire to the thatched hut of another chamar named Shiyam. Before the flames could be got under, two men sleeping in the hut were burnt to death. She made a full confession, and her story was that she had set fire to the hut, by the advice of a sorcerer, in order to get children. She had been married over twelve years and had had two children, who had died in infancy, and was thereafter childless.

Mr. Muir, the Sessions Judge, remarks on this:—"Her story is not impossible. It is said such cases are not uncommon."



1. MORTUARY HUT IN GRAVEYARD, TO WHICH THE DYING ARE REMOVED TO PREVENT
DEFILEMENT OF DWELLING HUT BY DEATH. CAR NICOBAR.
(*Photograph by E. H. Man. (Copyright.)*)



2. MǎFAI CHAIRS IN WHICH MǎFAI ARE CARRIED IN PROCESSION FROM VILLAGE TO
VILLAGE. CAR NICOBAR.
(*Photograph by E. H. Man. (Copyright.)*)

NOTE ON THE PREPARATION AND USE OF THE KENYAH DART-POISON *IPOH*.

By C. G. SELIGMANN, M.B.

[WITH PLATES XVI, XVII.]

DURING the visit of the Cambridge Anthropological Expedition to Sarawak as the guests of Dr. Charles Hose, the opportunity arose of studying the vegetable poison used by natives of the Baram district to poison their blowpipe darts. The physiological effects will be described elsewhere, these notes being limited to the preparation and use of the poison, and only such mention of its chemical nature or physiological effects will be made as may be necessary in order to compare the specimens of poison examined with those obtained by others from Borneo or the Malay Peninsula. Samples of the dart-poison *ipoh* were obtained from Kenyahs of the Baram district and from a number of immigrant Iban¹ who have recently taken to the use of the blowpipe and poisoned darts. The last named folk do not usually make the poison themselves but obtain it from the tribes of the interior, such as the Kenyahs.

The term *ipoh* is used by all up-country natives as a generic name for dart-poison, and is widespread throughout Malaysia, in different parts of which it is applied—often with a qualifying adjective—to the species of *Strychnos* and *Antiaris*, from the juice of which the local dart-poison is made.² Among the Kenyahs of the Baram district its use is however strictly confined to the upas tree, *Antiaris toxicaria*, and to the poison made by inspissating its juice, the active principle of which is a nitrogen-free glucoside which acts on the heart muscle and the central nervous system. As far as can be ascertained, the only sample of dart-poison from

¹ This term has been recently suggested by Haddon as a name for the people usually called Sea Dayaka. Cf. A. C. Haddon, *Headhunters, Black, White and Brown*, 1901, p. 325, and "A Sketch of the Ethnography of Sarawak," *Archiv. per l'Anthrop. et Ethnol.*, xxxi, 1901, p. 341.

² Various authors have at different times described the addition of white arsenic, realgar and antimony to the dart-poisons prepared in the Malay Peninsula and even in Borneo. As far as I know, no sample which has been analysed has ever been found to contain any of these. Throughout the Malay Peninsula, arsenic is stated to be largely used in producing the very characteristic watering of kris blades, and here it would be accessible to the non-Malay tribes and likely enough to be mixed with the poison. In Borneo, however, the case is different. During some months spent in the Baram district of Sarawak among a non-Malay people, during which time constant inquiries were made as to the composition and use of dart and other poisons, no mention of arsenic was ever made, nor, as far as could be ascertained, did the Chinese—in whose hands the local trade lies—import it. Again, Ling Roth, in his monumental compilation, has only been able to collect three instances of poisoning which could certainly or probably be traced to arsenic.

the Baram district hitherto examined was one brought back by Dr. Willy Kükenthal. This had been made by Kayans, and according to Kükenthal's opinion, based on chemical and physiological grounds, was certainly not the inspissated juice of a *taxicaria*, nor did it contain a glucoside, "but was to all appearances a quite unknown dart-poison."¹ Only a small amount of the substance was, however, at his disposal and that of Professor Knorr, who examined the chemical composition of the substance, while its action on frogs was so like that of some of the samples of undoubted *Antiaris* poison I have examined, that I am unable to accept Kükenthal's views.

Besides its use as a dart-poison, *ipoh* is administered internally as a medicine. Among the Punans it is commonly given in malaria, more rarely in dysentery. According to Hose, a piece about the size of a pin's head is given twice a day, usually in a banana. Probably this treatment is not continued for more than a short time, since in guinea-pigs three small doses given on alternate days produced death. Hose has seen among the Sebops a foul ulcer treated by pencilling the raw surface with a poisoned dart, and there was no reason to suppose that a dart of less than usual virulence was used. Again, the same authority has seen a man treated with *ipoh* recover from the bite of a really dangerous snake, *Lachesis Wagleri*. The treatment consisted of making repeated stabs round the wound, which was then well sucked and finally pencilled with a dart. It was stated that the dart must never be thrust into the wound nor must the treatment be delayed.²

As regards the treatment of wounds poisoned by *ipoh*, they should be immediately excised, after which *blachan*, a paste made of dried crustacea, should, if possible, be plastered on the wound. The latter practice is not due to any special property of *blachan*, but, according to Hose, to the native belief that all strongly smelling substances are antagonistic to *ipoh*.³ Experimentally, powdered *ipoh* mixed with *blachan* and left for twenty-four hours underwent no diminution in virulence.

¹ W. Kükenthal, *Ergebnisse einer zoologischen Forschungsreise in den Molukken und Borneo*, pp. 284 et seq.

² Rumphius, who from 1654 to 1659 collected the material for the *Herbarium Amboinense*, had heard of the alleged medicinal value of the juice of *A. taxicaria*. In his great work its leaves are figured as those of the "Macassar poison-tree." Of its inspissated juice his posthumous editor says (vol. ii, p. 269): "Ipo itaque crudum nec commixtum antidotum est contra ictus venatorium piscium, ac morsus millepedarum, si hujus emplastrum vulnere applicetur, quod dolorem citius sedat, ac venenum melius extrahit quam ullum aliud remedium. Porro si alicujus corpus ulcerationibus et scabie scateat, talis hujus Ipo pilulam cum Musae fructus carne commixtam assumat, quem omnem intestinorum impuritatem attrahet atque expellet."

³ Apparently the same idea existed in Macassar in Rumphius' time. In *Herbarium Amboinense* (vol. ii, p. 270) it is stated that "Arbor Poele tantum cum hoc veneno exercet odium et antipatiam ut, si ejus ramulus vel folium huic supponatur, vel in camera suspendatur, in qua hoc venenum asservatur, illud ita enervet, ut viribus penitus destitutum sit." Poele is, according to Geiger, a species of *Alstonia*, many members of which genus are odoriferous.

The process of collecting the upas sap and its inspissation and subsequent application to the sharpened strips of *nibong* (*Onchosperma horrida*) wood to be used as darts, was seen during a stay made at the house of the Murik (Kenyah) chief Taman Aping Koleh at Long Tamala on the Baram river. No magic was used, nor were any charms or incantations muttered at any stage of the proceedings, the whole matter indeed appeared an essentially commonplace and utilitarian affair to Taman Aping Koleh and his people.

A group of upas trees was known to exist a few miles up-stream, close to which was a clump of bamboos. Lengths of these reaching from just below one transverse septum to just below the next were then cut, and the upper open end pared obliquely to a somewhat blunt point. The upas tree was then scored to the depth of about a quarter of an inch by means of a special form of gouge (Pl. XVII, 6), the channels so formed running obliquely and converging to a vertical channel, against the bottom of which was placed the pared lip of the bamboo collecting tube (Pl. XVI, 1). The juice so obtained was yellowish-white in colour and of an intensely bitter taste, rapidly becoming buff-coloured on exposure and slightly sticky. Tested with litmus paper a few hours after it had been collected its reaction was neutral.

In the ordinary way the juice soon turns a brownish black and is said to lose its deadly properties, but a sample collected in a tightly corked vessel retained its colour and its strength for months.

The juice was brought to the long-house in the bamboo tubes in which it had been collected, and a number of small open palm-leaf vessels prepared by folding on itself an oblong piece of the leaf of a palm (*dawn tsang*), much as children make paper boxes. The edges at the two ends were not, however, turned over, but the vessel was kept from collapsing and stiffened by short pieces of the mid-rib of the leaflets of a palm (*lemajan*) run through its walls. Into these vessels, called *tabaiyok* (Pl. XVII, 7), which were suspended a few feet above one of the open fire-places of which there are many about the common verandah of the long-house, the juice was poured forming a layer at the bottom about an inch thick. A small fire was kept going under the vessels and the juice stirred from time to time. When it had become a thick viscid mass the vessel was taken down and allowed to cool, when the inspissated juice set to a hard brittle mass. Often before this had taken place and while the mass was still soft enough to take the imprint of the finger, the strips of mid-rib stiffening the vessel were removed and the fast hardening poison rolled up in the leaf, to which it stuck fairly firmly, the ends of the packet so formed being subsequently tied down with a strip of rattan or cord (Pl. XVII, 9).

In this condition it appears to keep indefinitely, and samples which have lain for over two years in an ordinary tin box have in no degree lost their potency.

Among the Kenyhs it appears that the dried juice of *A. toxicaria* is alone used as a dart-poison; certain other tribes however profess to add other substances with the idea of making their poison more virulent. Dr. Hose informs me that the Milanaus are said to add snake venom, while I obtained from Datu, an Iban,

a specimen of *ipoh* supposed to contain the pounded fangs of a venomous snake called *Ular blalang*; microscopical examination failed, however, to yield any evidence in support of this statement, nor did the physiological action of the poison differ in any way from that of other specimens examined. The Punans of the Silat were said on good authority to mix cortical shavings of the wild gambier tree with their fresh *ipoh* juice; these were strained out before the poison was inspissated. Another specimen given me by Datu, was said to consist of the dried juices of two trees, one of which was the same as the Kenyah *ipoh*, while the other, a shrub, might from his descriptions have been considered to be a species of *Strychnos*. Chemical examination however failed to reveal the presence of strychnine, while physiologically the action of this specimen differed in no way from that of other samples of *ipoh*.

The darts *langan* are made of strips of palm wood 20–30 cm. long sharpened at one end, rounded and whittled down till their diameter is about 3 mm. (Pl. XVII, 8). Some of the poison is then powdered and mixed with water on a wooden palette or shallow dish (Pl. XVII, 5) to the consistency of a thin paste. This is then smeared on and round the points of the darts for a distance of about 2 cm. Such darts are used for the smaller animals, for big game the point of the dart is split, a thin triangular blade of metal inserted, and the whole plastered with *ipoh*; 800 mgs. of the poison were scraped off one dart of this type. The process takes place before one of the open fireplaces before referred to; the poisoned darts are next arranged on the wooden board forming one wall of the fireplace so that their points projecting toward the fire, which is purposely kept low, receive enough heat to soon dry the poison. The process is well seen in Pl. XVI, 3, where resting on the palette is an old broken dart used for smearing poison on those in the process of manufacture. Beyond this is a bone-handled knife used for powdering the poison, while opposite the right leg of the operator the newly smeared darts are drying one above the other, being laid obliquely across each other from right to left and left to right alternately, their points kept apart by a splinter of wood, often an unpoisoned dart, struck vertically into the beak forming the side of the fireplace.

The butt of the darts, usually adjusted shortly before use, consists of a cone 2–3 cm. long made of the soft pith of the sago palm. The cone itself is truncated, and a number of such cones are usually kept in the quiver below threaded on an unpoisoned dart. The cones are prepared by cutting a number of cylindrical pieces of pith of the right length. These are then roughly pared and placed upon the pointed end of a wooden tool *pachon* (Pl. XVII, 8) used to ensure the base of the cone accurately fitting the blowpipe. The *pachon* consists of a rounded handle of hard wood usually more or less ornamented, which at one end is of the same diameter as the bore of its owner's blowpipe; from the centre of this end there projects a rounded spindle some 2 cm. long of about the same diameter as the unpointed end of a dart. The pith cone is forced home on the spindle and its circumference at its base carefully pared to that of the rounded end of the *pachon* from which the spindle projects, thus ensuring the butt accurately fitting the blowpipe.

When ready for use the darts are kept points downward in a bamboo quiver the handle of which (Pl. XVII, 3) is tucked into the loin-cloth of the operator. To guard their points a small open bag of the skin of some animal with the fur inside is usually placed mouth upwards in the quiver. Many of the quivers seen also contained a small mass of dried blood which had as its nucleus short fragments of old darts, and in which there were generally imbedded a few teeth and fragments of bones. This conglomeration, called *siap* (a generic term for charms), always contained the blood of more than one animal, and when possible the blood of many animals entered into its composition. When hunting it might be smeared with the blood of recently killed animals, but this was by no means invariably done. There seems little doubt that this form of *siap* worked by, and was a frank example of imitative magic, a conclusion strengthened by the presence in some quivers of small hook-shaped pieces of wood resembling on a small scale those larger hooks (*kawit*) which are hung up with skulls in the verandahs of the houses, "with the idea that they will help the head-hunters to obtain more skulls on their forays."¹

Several blowpipes, *klepôt*, were seen in the process of manufacture; all these were made from a fairly tough yellow wood. Pieces of this, from 7 to 8 feet long, and some 2 or 3 inches square in cross section, had been seasoning in the verandah for some weeks. When one of these was considered ready, a board was removed from the floor of the pile house, the piece of wood passed through the hole thus formed, and its lower end securely lashed to a base formed by a light scaffolding built among the piles supporting the house (Pl. XVI, 2). The boring (Fig. 1) is done with a rounded iron rod flattened and sharpened at one end. Ling Roth, quoting Crocker, says that the boring iron is chisel pointed. That used by Taman Aping Koleh's people had no flat surface at its cutting edge, the latter being formed at the expense of both surfaces as in a graver's tool. Its blunt end was hafted into a long wooden handle. When the boring was commenced an assistant steadied the edge on the projecting end of the future blowpipe. At first only a rotary movement was imparted to the rod, later when a few inches had been drilled out an up and down motion was given to the borer, which was worked so quickly—for the most part without an assistant—that the rotary movement ceased to be obvious. Throughout the process, which, in expert hands, takes no longer than a day, the drill is constantly wetted. Crocker saw a Bakatan standing

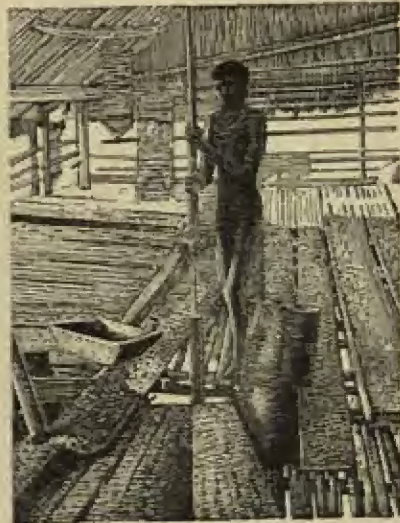


FIG. 1.—KENYAH BORING BLOWPIPE.

¹ A. C. Haddon, *loc. cit.*, p. 396.

beneath the piece of wood he was working on and boring upwards. When the boring is finished the superfluous wood is whittled away, and the outside rounded and polished. I did not hear of rattan, as stated by Crocker, or any other material being worked through the finished blowpipe to give the interior of the latter its usual smoothness, but unluckily no special question on this point was put. Finally most of the Murik blowpipes have a spear-head fitted to them; no sights, such as have often been mentioned, were noticed. The iron rod used as a drill, which was stated to have been in the tribe for a long time, was somewhat doubtfully suggested to have been originally obtained from the Chinese.

Prizes offered for the best blowpipe shooting were productive of twelve entries. A rectangular target with a centre of $3\frac{3}{4}$ inches, an inner of 10 inches and an outer of $16\frac{1}{2} \times 20\frac{1}{2}$ inches, was used. At 20 yards out of three shots the two winners each scored two bulls, and only one competitor failed to hit the target. At 30 yards there was a great falling off, at 35 yards all except Lidam the winner shot wildly and for the most part missed the very generous target at least twice out of the three shots allowed. The force with which the darts struck was remarkable, they penetrated the moderately hard wood of the target about $\frac{1}{4}$ of an inch.

In conclusion I take the opportunity of acknowledging my indebtedness to Dr. Charles Hose, Resident of the Baram district of Sarawak, for many specimens of the poison as well as for his invaluable assistance in collecting details from the natives and verifying them for publication in this note.



1. SCORING UPAS TREE; THE JUICE COLLECTS IN THE BAMBOO PLACED BELOW VERTICAL CHANNEL.



2. BLOWPIPE PROJECTING THROUGH THE FLOOR OF THE HOUSE AND SUPPORTED ON TEMPORARY SCAFFOLDING WHILE BEING BORED.



3. KENYAH SMEARING DART WITH IPOH POISON.



4. MAKING PALM-LEAF VESSEL FOR INSPISSATING THE UPAS JUICE.



5. WOODEN PALETTE FOR MIXING POISON.



6. GOUGE FOR SCORING THE UPAS TREE.



7. TABAIYOK: PALM-LEAF VESSEL FOR HOLDING THE JUICE OF THE UPAS TREE.



8. PACHON, PACHON WITH PITH BUTT IN POSITION, PITH BUTTS ON DART, AND DART.



9. FINISHED POISON WRAPPED IN PALM-LEAF.



10. KENYAH SHOOTING WITH BLOWPIPE.

THE KENYAH DART-POISON IPOH.

ON A RARE FABRIC OF KABYLE POTTERY.

BY D. RANDALL-MACIVER, M.A.

[WITH PLATES XVIII, XIX, *cf.* PLATE XX.]

IN a paper which was read before the Institute some eighteen months ago, I had occasion to treat at some length of the subject of Kabyle pottery. The various types were then classified for purposes of description under six headings, viz.:— (1) Pots with white or light yellow decoration on a red ground. (2) With red decoration on a white ground. (3) With black decoration on a white ground. (4) Red ware with very little ornamentation. (5) Pottery with black decoration on a yellow ground. (6) Plain pottery without any painted decoration.

It was pointed out that the third of these classes is of peculiar interest from the circumstance that it is identical in respect both of technique and of ornamentation with certain Cypriote ware which may be dated to about 900 B.C.

At the time of presenting the paper in question, I was able to describe only such few specimens of this rare black-and-white pottery as had been brought back from Algeria by the late Mr. Anthony Wilkin and myself. Within the last few months, however, I have been given the opportunity of studying the unique private collection belonging to the lady who presented to the British Museum the fine examples which it possesses; and it has seemed worth while to publish together in one place a representative group of the entire series.

Accordingly, in Plates XVIII and XIX are shown twenty-one examples; which, with the exception of those numbered as 2, 7, 11, 15, are reproduced on a uniform scale of $\frac{2}{3}$ th natural size. The four which are on a slightly larger scale are in the British Museum; No. 2 is 10 inches high, No. 7 and No. 11 are $9\frac{1}{2}$ inches high, and the bowl figured as No. 15¹ is about 8 inches wide. For the photographs of these four specimens I am indebted to the courtesy of the officials of the Ethnological Department.

Nos. 5, 6, 8, 9, 10, 12, 13, 14 were collected by my fellow traveller and myself in Algeria and are now in the Pitt-Rivers Museum at Oxford. The remaining examples are taken from the private collection already mentioned, to the owner of which my cordial thanks are due for the permission given me to study and to photograph them.

These pots, which, it will be noticed, are of very various forms and dimensions, are characterized by a simple scheme of rectilinear ornament painted in black upon a brilliant white background, that in the best examples has the appearance of a hard slip. Whether it can properly be described as a slip must depend upon the exact connotation, as yet scarcely established, which is to be assigned to that term. Unfortunately we did not in our travels come upon the seat of the manufacture, which is said to be in the neighbourhood of Toudja, on the north-eastern borders of Algeria. Consequently, I am unable as yet to describe the full process from ocular observation; but an examination of the various specimens figured in the illustrations makes it possible to ascertain the essential features. Thus it is evident, for in-

¹ The decoration of No. 15 is painted in dull red instead of black; but this seems to be an accidental variation, and the pot is otherwise identical in character with the others which are described.

stance, that the white surface has not been produced by *dipping* the vase into a finely levigated clay, as in the process generally adopted with what is called "slip" ware. For in many cases the white has overlapped on to the inner surface of the vessel in a way which could only occur if it was laid on as a thick wash by means of a brush.

The treatment therefore of the black and white ware,¹ as also that of the red-decorated white ware of Class 2, must have been the same as that which we actually saw practised at Tagamunt-Azuz and at other places where the commoner classes of pottery were manufactured. That is to say, the woman-potter, having fashioned the vase or bowl in the coarse rose-coloured clay of the country, leaves it on one side until such time as it is fully dried. Then she moistens the surface with water and burnishes it with a pebble until it is smooth enough to receive the paint. The pigments are obtained from raw native earths; the white is a marl containing 70 per cent. of silica with 18·5 per cent. of alumina, while the black is an iron ore containing 88·4 per cent. of ferric oxide. First the white is applied as a heavy wash with a very broad brush, and then the patterns are painted upon it with fine brushes of graduated thickness.

Unlike the better known varieties of Kabyle pottery, and unlike our Class 2, the black and white ware does not receive a final varnishing with yellow resin. The background consequently retains its pure whiteness, with a smooth hard surface which is no doubt produced by pebble-burnishing. The red *Lak* is, however, sometimes used to fill in blank spaces (*e.g.* in Nos. 8, 9, 10, 12, 13, 14).

The patterns are of peculiar interest; how closely they are identical with those of the Cypriote pottery will be shown by Mr. J. L. Myres in his accompanying paper (p. 248). They are all of rigidly rectilinear motive, and, in spite of cursive degradations, can be shown to be composed of only three elements, viz.:—(1) the Triangle, (2) the Lozenge, and (3) the Band (Plate XX).

(1) The triangle is in its simplest form an open zigzag, as shown in 21, of which Plate XIX affords a good example.

Solid triangles, filled in with black, are commoner and occur very frequently in one combination or another. In 24 they are arranged consecutively on the same side of a horizontal line, in 26 they are alternated on either side of the line, and from 26 by a process of cursive degeneration are evolved 15, 16, 17, 23, 24, and 25. The triangles are at first carefully drawn, but with careless execution the original form is quickly lost, so that the dog-tooth becomes a mere scrabble, and the scrabble is ultimately transformed into a regular cross-barred line (25). The latticed triangle (44) is not less common than the solid triangle, and may be observed on Plate XVIII, 14 and 15.

(2) The lozenge, which appears everywhere in this ornamentation, is apparently derived from the juxtaposition of triangles. It is the most frequent of all motives throughout Kabyle work. Very commonly alternated with the triangle on the same piece, it may similarly be open, solid, or latticed (37, 44, 50). Of the

¹ Mrs. Eustace Smith has lately presented the Pitt Rivers Museum at Oxford with two very fine specimens of the Toudja series.



1



2



3



4



5



6



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8



9



10



11



12



13



14



15



16



17



18



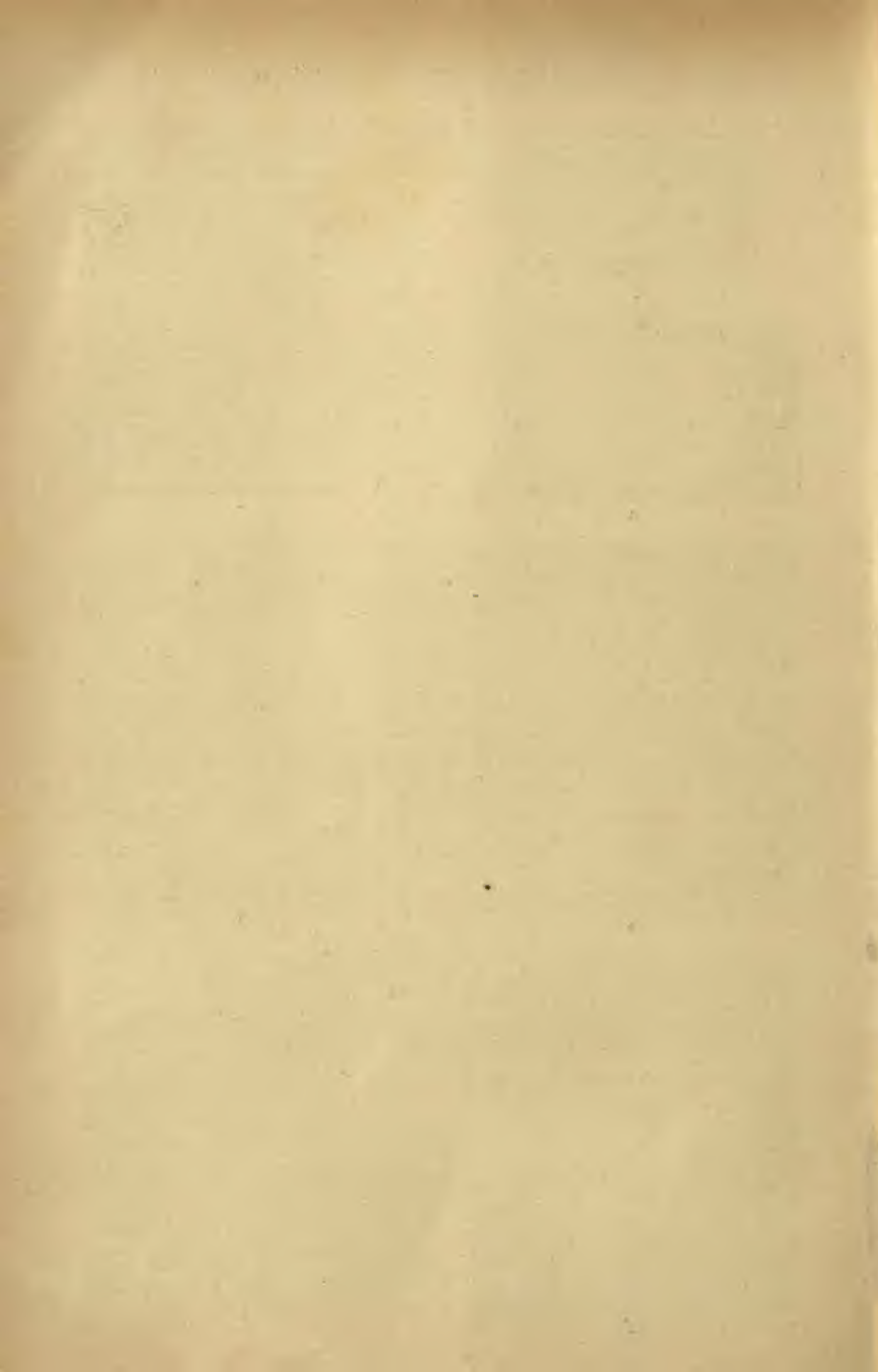
19



20



21



various combinations in which it occurs 33 is perhaps the most characteristic. In 33, 34, 37 are seen some further elaborations of 50 and 33, which, however, are mere reduplications of the same essential elements without the addition of anything novel. Very often such patterns as 33, 34 are carried one stage further by the addition of oblique lines to the small lozenges at the two sides (*cf.* the ornament of Pl. XVIII, 13). The latter then present much the appearance of lizard claws (35c), and the pattern might easily be supposed to be zoomorphic, but it is clearly nothing more than a development of the familiar geometrical form.

The pattern shown in 53 is interesting as it explains what would otherwise be a perplexing peculiarity in Pl. XIX, 20, viz., the occurrence on the body of the vase of what seem to be two circles connected by a vertical line (54). I have elsewhere remarked that the circle and the spiral are never found among the designs painted upon Kabyle pottery. And this pattern on Pl. XIX, 20, affords no exception to the rule, for what look like circular rings prove on a close examination to be very carelessly drawn lozenges of the same type as those which appear at the four corners of 53. Here then we may observe the first step towards the development of the circle as an ornamental motive; but native Kabyle designers probably never advanced any further.¹ It is only on Tuareg skin vessels, so far as I am aware, that the spiral is found.

(3) The band, either vertical or horizontal, needs no special illustration. Such large pots as Pl. XIX, 17–21, show its use on wide surfaces, *cf.* Pl. XX *passim*. Where the black zones are broad they are often separated by the thin scrabbled line, 17, which has been shown to have originated from the pattern seen in 26. The broad black zones were applied first, and sometimes so little space was left between them that there was hardly room even for a wavy line; so that in the last resort the pattern derived from the triangles is reduced to little more than a succession of pinhead dots.

The existence in our own time of this pottery with its unquestionable pedigree of full 2,500 years is from more than one point of view a circumstance of the highest interest. On the one hand, whether the manufacture originated in Cyprus or in North Africa, it proves a close commercial intercourse between the two countries at a period not later than 600 B.C. On the other hand it affords yet another welcome example of the persistence of an art unchanged and unimproved for an almost incredible length of time. Just as the punctuated or incised black ware of the Mediterranean occurs in Egypt in pre-dynastic times and is found again in the period from the XIIth to the XVIIIth dynasty, and just as the black-topped red-ware of the earliest chalcolithic Egyptians reappears in the middle Kingdom, so a technique that was invented nearly 3,000 years ago in Cyprus or in Libya is represented at the present day by the pottery of the Algerian Kabyles.

¹ [The same development is traceable in the incised ornamentation of the earlier Bronze Age in Cyprus: see Ohnefalsch-Richter, *Kypros*, Plate cexvi, 3, 4, 5, 7, 10, 11, 12, 14, 32 and a good series of specimens in the Ashmolean Museum, Oxford. For Sicilian Neolithic parallels see *B.P.it.*, XVI, Pl. vi, 22: viii, 1, 4, 9, 14.—J. L. M.]

NOTES ON THE HISTORY OF THE KABYLE POTTERY.

BY JOHN L. MYRES, M.A., F.S.A.

[WITH PLATE XX.]

THE object of this note is to discuss the significance of certain correspondences of form and ornamentation which, Mr. Randall-MacIver suggests (p. 245 above), may exist between modern Algerian pot-fabrics, and certain phases of pottery-making in ancient Cyprus; and to raise the question how far, in spite of the great interval of space and time which separates the two groups, we should be justified in inferring some connection between their styles.

Mr. Randall-MacIver refers briefly, in his concluding paragraph, to the "unquestioned pedigree" of the Algerian fabrics, running back for, at all events, 2,500 years; and in his recent *Libyan Notes*¹ he has presented a strong case for an even longer pedigree. As this conclusion, however, is presupposed by the whole argument which follows, I may perhaps be permitted to restate briefly the position which is assumed, and to support it, if that be necessary, by a few supplementary considerations.

The first argument for a very high antiquity for these Algerian fabrics is supplied by their technique, which is wholly handmade, and uncontaminated with a knowledge of the potter's wheel. Now there is, I think, no instance known of a handmade pottery fabric coming into existence in an area where a wheelmade fabric has once become familiar; and there is every reason to believe that wherever a handmade fabric and a wheelmade fabric are found to coexist, the handmade fabric represents a survival from a stage of culture previous to the introduction of the wheel. Such primitive fabrics are, however, very persistent in areas where competition is slight, or where local circumstances provide a citadel of refuge for the representatives of the older tradition; and I published recently² a striking instance of the survival in another part of the North African coast, not merely of two uncontaminated wheelmade fabrics—Arab and Græco-Roman—alongside of one another, but also of a handmade fabric, alongside of both of them, which is indistinguishable, except by its even greater rudeness of execution, from the neolithic fabric of the neighbourhood. Now in Algeria, as in other parts of Punic Africa, the knowledge of the wheel was introduced, as the excavations on the site of Carthage show, at least as early as the seventh century B.C.; while there is every probability, as we shall see, that, as in Sicily, immediately oversea,

¹ *Libyan Notes*, by D. Randall-MacIver and Anthony Wilkin (London, Macmillan, 1901), p. 58ff.

² *Man*, 1901, 83.

the contact with the wheel-using culture of the Eastern Mediterranean took place even earlier still, and probably in the latter part of the Bronze Age. The "pedigree," therefore, of the Algerian handmade fabrics may probably be traced back at least to the ninth or tenth century B.C., on the evidence of the mode of manufacture alone.

A further consideration is supplied by the surface technique. Nearly all the varieties of "Kabyle" pottery—to use a popular and convenient generic term—present more or less definite tokens of descent from a primitive red-faced fabric analogous to Mr. Randall-MacIver's class (4), to the red-faced pottery of pre-Dynastic and proto-Dynastic Egypt, and to the "red polished ware" of the earlier Bronze Age in Cyprus and on the Syrian coast. In support of a similar contention, I had occasion some time back¹ to discuss the very wide distribution of this characteristic "red-faced" mode of pot-decoration; and more recently, also, to describe the occurrence of intermediate links,² both in Tunis and in the neighbouring areas of Malta and Sicily, which would carry the period within which "red-faced" pot-making was practised in these parts well back into the Bronze Age, and within a measurable distance of the very high antiquity suggested in *Libyan Notes*.

Thirdly, in the same discussion, Mr. Randall-MacIver drew attention to certain correspondences both of form and ornament between those Kabyle pot-fabrics which conform most closely to the old red-ware type of North Africa, and the pottery of analogous technique in pre-Dynastic Egypt; and it is in continuation of the same line of enquiry that he has published now his investigation of the "white-faced" black-painted fabric of Toudja and its neighbourhood, which stands at the other extreme of the gradations of Kabyle ceramic, from the "red-faced" group, which we have just seen reason to believe to be the most primitive of the whole series.

The White-faced Fabric of Kabylia, and its affinities.

Like the other "Kabyle" fabrics, the "white-faced" fabric is wholly handmade, and this fact must be kept in mind throughout, in comparing it with other fabrics elsewhere, which resemble it in technique, or forms, or ornaments.

The distinctive feature of its technique is the thick white chalky slip, which has been sufficiently described already. Only three of the ancient pot-fabrics of the Mediterranean present anything comparable with it. The first of these, the white-faced pottery of Naukratis in the Egyptian delta, may be dismissed briefly. It is a very local and very temporary experiment, in an exceptional corner of the Greek colonial world; it belongs to the middle of the sixth century B.C., when direct Greek access to North Africa was cut off by the growing power and jealousy of Carthage; it is wholly wheelmade; its forms are a compromise between those of the XXVIth Dynasty in Egypt and the contemporary forms

¹ *Journ. Anthropol. Inst.*, xxvii, 173-4.

² *Mon.*, 1901, 71.

of Asiatic Ionia; and its ornament belongs almost wholly to the Levantine orientalism of the period. In every respect, therefore, except the single point of technique, it contrasts markedly with the "Kabyle" survival, and need not trouble us further.

The second is that fabric of late Bronze Age pottery in the Levant, and especially in Cyprus, which in the *Cyprus Museum Catalogue* I described as "white-slip ware." Its place of manufacture has not even yet been identified, but the fabric is nowhere so frequently or so elaborately executed as in Cyprus; and it is now very probable that in its later stages it became naturalized in that island; though its origin is almost certainly to be sought on the Syrian coast opposite. Its date is fixed, relatively, by its predominance during the Mycenaean occupation of Cyprus; and, absolutely, to the centuries from the twelfth to the fifteenth B.C., by its appearance¹ on Mycenaean sites in the Aegean, and on XVIIIth Dynasty sites in Egypt and Syria. In Cyprus, where alone the history of the fabric can be traced in greater detail, it seems to make its appearance—if anything—a little earlier than the Mycenaean importations, and to disappear abruptly at the close of the true Mycenaean Age, leaving no successor among the fabrics of the early Iron Age which follows. Outside the Levant, no such fabric is known in the later Bronze Age or early Iron Age, and the only parallels which I know at all—besides the exported examples already quoted—are a vase found somewhere in Malta (now in the Valletta Museum; unpublished) and some fragments in an identical style, found on the Roman site at Rabato in the same island, which are preserved (unpublished) in the Rabato Museum. In spite of the close similarity of the fabric, however, the Valletta vase is of a form which suggests an Arab origin, and the Rabato fragments are too small to warrant any conclusion on this point; so that these isolated scraps are only of value as bridging the gap both in time and space between the Bronze-Age Levant and modern Algeria.

There is therefore no direct evidence that the "white-slip ware" of the Cypriote Bronze Age was ever exported to Algeria; and only doubtful evidence even so far as Malta. On the other hand, it is only fair to note, *firstly*, that the present indications point to the Syrian coast as the probable place of origin for the "white-slip ware"; *secondly*, that the Syrian coast was in any case the starting point of the Semitic adventurers who founded Carthage and the Liby-Phoenician regime; *thirdly*, that though (with the exception of the doubtful Maltese fragments) the white-slip style of the Levant does not stray beyond the Levant and the Aegean, the contemporaneous and very closely related ware, which in the *Cyprus Museum Catalogue* is described (not very appropriately) as "base ring ware," and seems likewise to have its home somewhere on the Syrian coast, has been found, very rarely, both in the Cyrenaica and in South Italy;² *fourthly*, that though the foundation-date of Carthage falls well below the probable lower limit of the "white-slip ware" in the Levant, and though the earliest tombs which have been

¹ The references are given fully in *Cypr. Mus. Cat.*, Oxford, 1899, p. 39.

² *Ibid.*, p. 37.

found as yet on the site of Carthage belong to the middle of the Early Iron Age, there is yet some probability that the Liby-Phœnician regime may date back in the direction of the latest phases of Mycenaean activity in Cyprus; with the corollary that, if so, the "white-slip ware" of Cyprus, being the finest fabric of pottery which can be traced as indigenous to the Syrian coast, would naturally be predominant among the ceramic imports of the Punic West.

But, unfortunately, the similarity between the Levantine "white-slip ware" and the "white-faced" Kabyle pottery is almost entirely confined to the technique. The resemblances of form are few and remote; an analysis of the two schemes of ornament reveals almost complete divergence both of treatment and of component elements; compare, for example, Fig. 1, with Plates XVIII-XX; and it

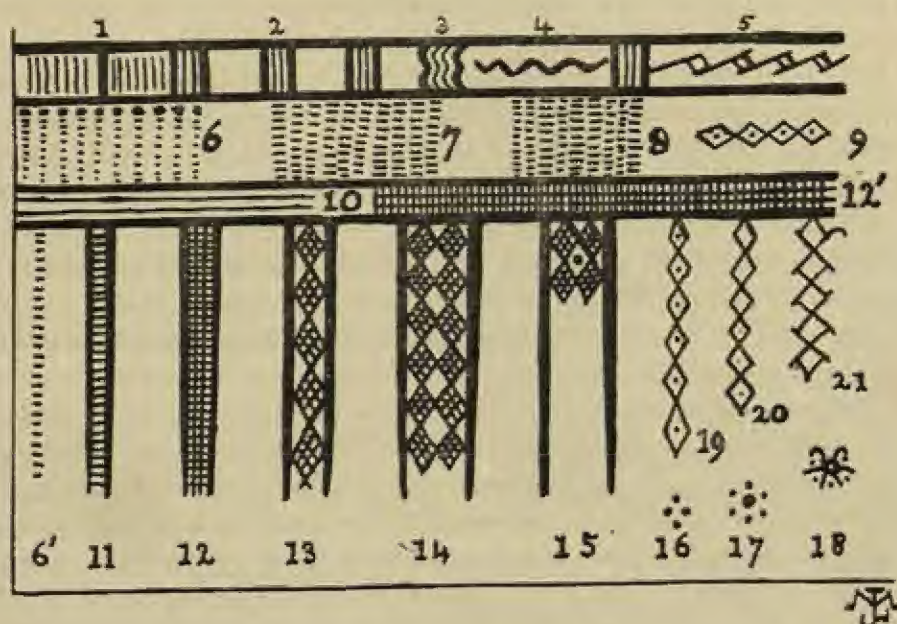


FIG. 1.—DIAGRAM OF THE ORNAMENTS OF THE WHITE-SLIP WARE OF CYPRUS.

is difficult to believe that a wholesale introduction of a "white-faced" technique could have been effected without appreciable contamination of the associated ornaments. Only on the hypothesis, *either* that the native Algerian ornament was already in advance of that of the "white-slip ware," *or* that some subsequent revolution in ornament could be assumed, could we account for the disappearance of the ornaments appropriate to the Cypriote "white-faced" technique, while the technique itself was adopted.

The third "white-faced" fabric which is found in the Mediterranean area—excluding inner Asia Minor—is that of neolithic and chalcolithic Sicily; which occurs, as in North Africa, in company with a bright red-faced fabric; and which is ornamented, like the white-faced itself, with geometrical patterns in black, and gives rise to a large series of intermediate styles. This style is best represented,

in its simpler forms, on sites in the provinces of Palermo¹ and Girgenti,² and in more advanced and elaborate developments in the province of Syracuse, at Monte Tabuto,³ at Monte Racello,⁴ and, above all, at Castelluccio.⁵ This "white-faced" fabric, with its "red-faced" but still black-ornamented concomitant, supervenes upon a coarse handmade pottery which is without any regular surface-facing at all and has incised or impressed ornaments only; and seems to come in, rather suddenly, in the latter part of the Neolithic period. It is itself of rough unlevigated clay, still wholly handmade; but the vessels have uniformly a fine superficial slip—either yellowish white, or warm brick-red, as described above—which is laid on thickly, and often smoothed or burnished afterwards.⁶ On this slip, geometrical ornaments, often very elaborate, are executed in a warm red paint, consisting essentially of ferric oxide; and occasionally, as at Monte Tabuto,⁷ in red and black together, or in a chalky white on a red ground.

Here we have, therefore, in the immediate neighbourhood of the North African area, a "white-faced" style which (1) is wholly handmade; (2) goes back to Neolithic time; (3) is accompanied by an elaborate geometrical ornamentation of very similar character to that of Kabylia; (4) presents indications⁸ of descent from an original "red-faced" style; (5) is actually associated, like the Kabyle fabric, with a well-marked "red-faced" style, and with numerous intermediates; (6) betrays the same tendency to diverge into trichrome (red-black-and-white), which is to be traced in the local variants of Kabyle style. Further minor peculiarities which confirm this general resemblance are (7) a fondness for blocked zigzags of the series 26–29 in Pl. XX; 26 for example reappears exactly in the province of Girgenti⁹ and 16 at Monte Tabuto¹⁰; (8) a peculiar elaboration, in the Syracusan province, of the over-shot line at the angles of the lozenge, such as underlies motives 33–4 *a*, *b* and 39, of the Kabyle style; (9) a series of marginal hooks and "lizard leg" motives (*cf.* 25*c*), which may be due, as Mr. Randall-MacIver indicates, to further elaboration of the "over-shot line," but which, in Sicily, are more

¹ Especially at Villafrati, where the white slip is also employed on rude painted figurines: Palermo Museum, unpublished.

² Published in *Bullettino de Paletnologia Italiana*, XXI, Pl. iv and XXIII, Plate i.

³ *B.P.It.*, XXI, Pl. vi; XXIV, Pl. xx, xxi.

⁴ *B.P.It.*, XXIV, Pl. xxii.

⁵ *B.P.It.*, XVIII, Pl. III, iii, 8*a*; vii, 21–28; and XIX, Pl. v, vi. For a fuller list of the Sicilian sites, see *B.P.It.*, XIX, p. 48.

⁶ Orsi, *B.P.It.*, XIX, p. 39, "é] frequente l'impiego di lisciatori, e costante l'applicazione d'un sottile stratarello o pellicola di creta purgata." p. 41. . . . "I colori impiegati sono tre: il giallo pellucido o bianco spuro, ed il rosso, quando vivo, quando smorto, per i fondi, con una serie di toni intermedi: il bruno, pure, con una serie di gradazioni dovute alla diversa cottura (nero, castagno, caffè, di rado sanguigno) per i fregi di superposizione:" *i.e.*, cream or white, and red, for the ground colours, and a brown paint (varying from black to ruddy, for the painted patterns).

⁷ *B.P.It.*, XXIV, Pl. xxi.

⁸ Especially in its fondness for panel-structure, and for broad marginal bands of red between the designs; and also in the occasional use, already noted, of white paint on a red ground.

⁹ *B.P.It.*, XXII, Pl. i.

¹⁰ *B.P.It.*, XXI, Pl. vi.

probably to be connected, as Dr. Orsi suggests, with the rude phytomorphic experiments, of which the later Syracusan fabric supplies abundant evidence independently.

In Sicily, which is of comparatively small area, accessible from the sea on all sides, and unprovided with "eagle's nests" like those of Kabylia, in which an archaic culture might go on uncontaminated, this remarkable style of ornamentation came to a sudden end with the full establishment of the Bronze Age. To this sudden disappearance two circumstances contributed. On the one hand the subsequent native style is a fine red-polished *bucchero*, which shows marked points of analogy, in technique and form, with the *bucchero* styles of the Bronze Age in central and southern Italy, and represents an intrusion—cultural or even political—from that quarter. On the other, it was approximately at the same epoch that Sicily felt the influence of the wheelmade, naturalistically ornamented pot-fabrics of the *Ægean*: which out-matched the native style at the same time in technique and in decoration. The crisis is closely analogous to that which occurred in Cyprus about the same period, where the introduction of Mycenaean wheelmade pottery rapidly extinguished the native handmade geometrical of the middle part of the Bronze Age.

I think, therefore, that there can be very little doubt that in the Kabyle fabrics of Algeria we have a survival,—due, more than anything, to the inaccessible nature of the citadels in which alone it has been maintained—of a widespread painted style, of Neolithic origin, represented in perfection by the Sicilian fabrics, and postulated, even in South Italy, by the derivative vase-forms and ornaments, and the inclination towards "white-faced" technique, which characterize the old native fabric of Apulia.¹

At first sight, it would still seem reasonable to suppose that these western styles of "white-faced ware" with their well-marked similarities of decoration, might be an original and independent development; and that the existence of the Sicilian fabric, adjacent to that of North Africa, might do away with the necessity for assuming a Levantine origin for the latter. A little consideration, however, will show that this is not necessarily the case, and that the Sicilian white-faced fabric stands even more in need of explanation than the other. The six fabrics of Kabyle pottery enumerated by Mr. Randall-MacIver² are not rigidly separated from each other, but present many intermediates, as indeed he has been careful to make clear.³ The whole series, in fact, ranges between two well-marked and incompatible extremes; a *red-faced*, highly-burnished ware, with little or no decoration⁴—another red type⁵ has its decoration in *white*—and a *white-faced*, unburnished (or merely *varnished*) ware, with copious decoration painted essentially in *black*,⁶ though the ferruginous pigment is liable to go red when overfired. Of these two antagonistic techniques, the red-ware is already known to date back in North

¹ Patroni, *Monumenti Antichi*, vi, p. 377ff. Echoes of the same, also, at Narce, near Falerii, in South Etruria. *Mon. Ant.*, iv, p. 263, Fig. 124.

² See p. 245, above, and *Libyan Notes*, p. 57ff.

³ *L.N.*, p. 57, 60, 62-3.

⁴ Type (4) on p. 245.

⁵ Type (1) on p. 245.

⁶ Type (3) or (5) on p. 245.

Africa to the beginning of the Bronze Age: the white-ware on the other hand has not as yet been found on any early site in North Africa, and may probably be inferred to have arisen at a relatively later stage than the red-ware; and, if so, probably came into existence through some kind of suggestion from abroad. And that the latter is likely, is suggested also by the fact that the white-faced fabric has almost wholly failed to maintain itself uncontaminated, but gives rise to a long series of intermediates between itself and the red-ware. Now all this line of reasoning is equally applicable to the Sicilian fabric. Here too the white-ware forms a series of intermediates with the red-ware which accompanies it, leading eventually, as at Monte Tabuto,¹ to a regular trichrome style; it intervenes suddenly, and apparently full-formed, in an area which hitherto had known only unfaced and unpainted pottery; and it is accompanied by a new set of forms, and a new and more elaborate system of decoration. But whereas in North Africa the red-faced fabric is certainly early, while the date of the first appearance of the white-faced is unknown as yet, in Sicily both the white and the red fabric appear practically simultaneously, and in great perfection: which would lead to the inference that the whole Sicilian style, so far from being indigenous to Sicily, is itself a marginal development of a group of styles which was already composite, and had been somewhat highly elaborated already elsewhere. That this "elsewhere" is not to be found to the northward is clear from the relatively degenerate character of the survivals already noted in South Italy: and the alternative conclusion is that the Sicilian style is itself dependent upon a North African style to the south-eastward; upon the prototype, in fact, of the modern Kabyle style, for the existence of which, in late Neolithic times, we have thus acquired a striking collateral argument.

Now whereas, in North Africa, the white-faced fabric has only maintained itself very locally, at Toudja and a few other sites,—while elsewhere it has given place more or less completely to intermediates between itself and the red-ware,—and whereas in Sicily, which we have now seen to be probably dependent, in the long run, on North Africa, we have the series of intermediates present throughout, until the premature disappearance of the whole style, it is in Cyprus alone, on the other hand—where the series of events is far more fully known, and where the foreign origin of the white-slip ware can be made out with tolerable certainty—that the "white-slip ware" maintained itself uncontaminated, not only over against the old "red-ware" of the earlier Bronze Age, but in face of acute competition with those other foreign fabrics, of more advanced technique and style, which were introduced by the Aegean settlers. All this would point to the conclusion that Cyprus lay close to, and eventually came within, an area in which the white-slip fabric was really indigenous; and in which consequently it was in a position to make a good struggle for survival: until, as we have seen, a complete revolution took place, in this inner area itself, which extinguishes the "white-slip ware" and leaves it no posterity at

¹ See p. 252, above, and *B.P.A.*, XXIV, Pl. xxi.

all. All this points to the Levant, and, in particular, to some part of the Syrian coast, as the focus of the "white-slip" style in the Mediterranean; the area of distribution of actual exports lying, as we have seen, from the Hellespont, by Thera and Athens, to Cyprus and Egypt; with the Cyrenaica, Malta, and South Italy as doubtful outliers, and Thessaly,¹ Sicily, and Punic Africa in the penumbra of its "zone of imitation." By whose means, and at what date it penetrated to the far west, we have already seen above (pp. 250-1).

The Geometrical Ornament of Kabylia, and its affinities.

We can now return to the question which confronted us before (251), how, if the "white-faced" Kabyle fabric preserves reminiscences of the Levantine mode of fabrication, it has failed to preserve the characteristic ornamentation of these imported models. And we may note here that if the Sicilian fabrics are to be regarded as derivative from North Africa, any explanation which fits the North African case must either fit the Sicilian also, or must be accompanied by an explanation of the discrepancy. Similar as the Sicilian and the Kabyle styles of decoration are in essentials, they yet differ markedly in the details of their vase forms and of their ornaments: and the question revives, whether any account can be given of the discrepancies. At this point it should be noted that both fabrics stand geographically on the margin of a large and, on the whole, homogeneous area, extending from the West African coast to the shores of the Red Sea. Over the whole extent of this area a very similar geometrical decorative art is practised at the present day. There is also every reason to believe that this art is also of great antiquity; though, as the objects on which it is represented are for the most part perishable, this latter point is not very easy to prove.² The three best known representatives of this widespread North African geometrical art are (1) the grass-plait and basketry of the Sahara; (2) the stained leather-work of the Tuaregs and Haussas; and (3) the stained camel-gut boxes and bottles of the Tuaregs, which come down from time to time to Algerian and Tripolitan ports. Of these, the basketry is to some extent put out of comparison by the difference of material and technique, and presents, besides, the largest number of peculiarities of design, though still with a considerable proportion of identical forms³; the leather-work *répertoire* comes remarkably close to that of the Kabyle pottery, and

¹ In the Neolithic settlement at Dimini: cf. Bosanquet, *Mon*, 1902, 76. "It is handmade ware, with a polished buff surface covered with geometric patterns in a slightly glossy brown black paint." Compare also the rare fragments of "white-faced" fabrics from inner Asia Minor, discovered by Messrs. Anderson and Crowfoot; to which I hope to be able to return at greater length before long.

² The only direct evidence as to its antiquity, of which I am aware, is the occurrence in Early Iron Age (vi-viii cent.) tombs at Carthage, of ostrich-egg vessels with red painted ornamentation not unlike that of the egg-shaped camel-gut vessels. Delattre, *Nécropole Punique de la Colline de Saint Louis*, Lyon, 1896. (*Extrait des Missions Catholiques*), p. 32, fig. 4.

³ Compare especially the recurrence of the basketry-patterns, on the Chawia textiles in *Libyan Notes*, Pl. VI, 1-3.

agrees also in the neglect of formal symmetry, and in the tendency to red-black-and-white trichrome; while the camel-gut vases, though their decorative *répertoire* is limited, repeat several characteristic motives—in particular the blocked zigzag (Pl. XX, 26), and the fringe of little blocked triangles round the margin of the principal motives, which is well shown in Plate XVIII, 11.

From the "common form" of this large group of design, it is the Sicilian, and particularly the Syracusan school, which deviates most markedly; and it deviates, as we have seen already, in the direction (1) of greater freedom, variety, and vigour of manipulation; (2) of great ingenuity in exploiting aberrations such as the overshot line, and the unsymmetrical panel with counterchanged tints; (3) of the introduction of curvilinear forms, some due perhaps to the bold handling which spreads a large simple design over a surface of great relative curvature, but some, also, apparently to frank imitation of plant forms.¹ This group of tendencies I am inclined to attribute to early contact with the naturalistic art of the pre-Mycenaean Aegean; not merely on the ground of general similarity of treatment, but because the influence of this Aegean culture can be traced independently (1) in actual imports of handmade but curvilinear-decorated vases in South Italy,² and even as far afield as Marseilles,³ as well as Sicily itself,⁴ and (2) in the occurrence of imitations of such vase-forms in all these areas, and in Sardinia also⁵; and this influence would naturally be much more strongly and directly felt round Syracuse on the east coast, than round Girgenti on the south-west; which corresponds exactly with the character of the resultant styles.

The peculiarities of the Sicilian school being thus, I think, sufficiently explained, we have finally to return to those of the Kabyle schools. That it is these, rather than the schools of the Saharan interior, which are divergent, hardly needs demonstration, in view both of the marginal position of Algeria, and of its proximity to the seafaring Mediterranean, which we have already seen to be responsible for the peculiarities of Sicily.

It is at this point that Mr. Randall-MacIver's comparison of the Cypriote geometrical art of the Early Iron Age comes in. The Mycenaean Age in Cyprus, with which, as we have seen, the Cypriote "white-slip ware" is closely connected in time, is succeeded, as in the Aegean, by an Early Iron Age with a markedly geometrical style of ornamentation. But whereas, in the Aegean, this Early Iron Age art shows close affinities with the incised geometrical art of the Early Iron Age of Central Europe, in Cyprus this analogy, though it certainly exists, is

¹ See especially *B.P.H.*, XIX, Pl. v, vi. Dr. Orsi foreshadows the same explanation as I propose here, but does not develop it in detail.

² Specimens in the Louvre (Salle D. 5), in the Fitzwilliam Museum at Cambridge (Leake Collection), and in the Royal Museum, Peel Park, Salford. To the last-named specimen I have referred already in *Man*, 1902, 26; and I describe it fully in *Man*, 1902, 96.

³ Dumont, *Bulletin des Correspondances Helléniques*, VIII, p. 188, Pl. xiii (Marseilles [Borély] Museum, No. 1321).

⁴ Orsi, *Monumenti Antichi*, II, Pl. i, 8 (from Cozzo di Pantano near Syracuse; Syracuse Museum): cf. an unpublished fragment (from Selinus) in the Palermo Museum.

⁵ *Monumenti Antichi*, XI, Pl. xviii, 16, 18.

disguised, even more than in Crete for instance, by the persistence of late-Mycenean traditions; by its proximity to a distinct geometrical art in Syria, the origin and extent of which is very obscure; and by its exposure, almost throughout, to the marginal influence of Egyptian and Mesopotamian conventions.

Far richer and more varied, then, than the geometrical art of the Ægean, it is the art of the Early Iron Age in Cyprus which, Mr. Randall-MacIver suggests, may supply the source of the peculiarities of the Algerian school of North African geometrical work.

That the Cypriote geometrical style of the VI—IXth centuries was within reach of the North African coast-lands is clear. The excavations of Père Delattre at Carthage¹ have shown that though, for its fine pottery, Carthage was dependent upon the Greek colonies in Sicily, the types of the common home-made pottery are derived almost without exception from the same series as those of contemporary Cyprus; while the few exceptions are paralleled, on the mainland opposite, by the pottery of the later strata at Tell-el-Hesi in Philistia. This group of discoveries, in fact, combines to show—what, without actual excavation in Phœnician sites, we cannot prove directly—first, that the non-Hellenic elements in the ceramic art of the Early Iron Age in Cyprus (which are also the elements which are common to the Cypriote and the Philistine pottery) may be described, with some probability, as Phœnician; and secondly, that, in their pottery at all events, the Carthaginians maintained fairly close intercourse—as we should expect *a priori*—with their kinsmen on the Syrian coast. None, it is true, of the specimens actually excavated at Carthage can compare, in finish or elaboration, with the best Cypriote examples; but the examples obtained by Père Delattre are already numerous enough to justify the conclusion that, in essentials, the scheme of decoration was the same in the Phœnician Levant and in Punic Africa; that, in fact, the fine pottery of Cyprus may be taken, in regard to its non-Hellenic elements at all events, as a fair illustration of the pottery of Phœnicia during the period of the Punic colonization: and consequently of the ceramic models which prevailed on the North African coast during the centuries preceding the sixth. No foreign pots, it is true, have been actually found as yet, so far as I know, in the interior of Punic Africa; but for these purposes the area may fairly be said to be still unexplored; and meanwhile the fact of the importation of foreign objects, other than pottery, is illustrated by the fibulæ of "Celtic" type which have been found at El Kef near Constantine.²

The resemblances which can be detected between the Cypriote geometrical style and the style of the Kabyle vases, though they are most apparent in the fabric of Toudja, are not by any means confined to it, but run through all the more elaborately painted varieties of Kabyle pottery. It will be convenient, however, to confine the enquiry almost wholly to the fabric of Toudja and vases

¹ Delattre, *Nécropole Punique de la Colline de Saint-Louis*, Lyon, 1896. (Extrait des *Missions Catholiques*.)

² A. J. Evans, *Proc. Brit. Ass.*, 1899 (Dover), p. 872.

of similar make: and in view of the great abundance and ill-published condition of the Cypriote evidence, to take as a standard the analysis of the ornamentation of the Kabyle vessels on Plates XVIII and XIX, and apply the scattered Cypriote references to these. The table which follows gives, accordingly, in the first column, the reference numbers of the ornamental motives extracted in Plate XX; in the second, the reference numbers of the vessels in Plates XVIII and XIX on which each motive occurs; in the third and fourth, the occurrence or non-occurrence of each motive in the Sicilian provinces of Girgenti and Syracuse respectively; in the fifth, the occurrence or non-occurrence of the same motives on Early Iron Age pottery in Cyprus; and in the sixth, the museum numbers or catalogue references to the Cypriote analogies.¹

¹ The following abbreviations are employed:—

- CMC* = Myres and Ohnefalsch-Richter. *Cyprus Museum Catalogue*. 1899.
KBH = Ohnefalsch-Richter. *Kypros, the Bible, and Homer*. 1892.
LPC = Louis P. di Cesnola. *Cyprus: its Cities, Tombs, and Temples*. 1877.
APC = Alexander P. di Cesnola. *Salamina*. 1882. (Specimens mostly at South Kensington.)
Brit. = British Museum (Dept. of Græco-Roman Antiquities: mostly unpublished).
Brit. (Exc.) = Results from Amathus in 1894, published in *Excavations in Cyprus*, 1900.
Ashm. = Ashmolean Museum, Oxford (mostly unpublished).
Lou. = Louvre Museum, Paris.
NY = Metropolitan Museum, New York (Louis P. di Cesnola's collection); for reasons which will be appreciated by students of Cypriote antiquities, I have confined myself to examples which I have verified personally.
Const. = Imperial Museum, Constantinople.
PR = Pitt-Rivers Museum, Oxford (additional examples of the same Kabyle fabric, presented recently by Mrs. Eustace Smith).

TABLE OF KABYLE ORNAMENTS, WITH SICILIAN AND CYPRIOTE ANALOGIES.

Reference No. in Plate XX.	Reference No. of Vase in Plates XVIII-XIX.	Girgenti.	Syracuse.	Cyprus.	Cyprus: References to Early Iron Age Analogies.
1	2	----	----	----	<i>CMC</i> , 1143; <i>APC</i> , fig. 238; <i>LPC</i> , xlvii, 40.
2	18	----	----	----	<i>Brit. (Exc.</i> fig. 151, 6; 152, 3).
3	2, 4, 17, 18, 21	----	----	----	<i>CMC</i> , 329, 442, 489; <i>Brit.</i> C 244, 250, cf. 130, 250; [Ashm. Cypr. 442; <i>NY</i> , 1181; <i>Const.</i> 545; <i>KBH</i> , clii, 11, clxx, 10d.
4	16	----	----	----	
5	1, <i>PR</i> (var.)	----	----	----	Cypr. has the single lattice commonly (as 7), but [does not multiply the lines.
6	4	----	----	----	<i>CMC</i> , 1111; <i>NY</i> , 981 (variant); <i>NB</i> , <i>Syrac</i> sp. carries slightly.
6a	18	----	----	----	<i>CMC</i> , 1175, 1176b, 1177; <i>Brit. (Exc.</i> fig. 151, 4).
7	16, 20	----	----	----	
8	1, <i>PR</i> (var.)	----	----	----	<i>CMC</i> , 1153 (var.); <i>Brit.</i> (73-3-20-101); <i>Vienna</i> , [62 (var.); <i>Const.</i> 1086 (var.); <i>Carthage</i> (var.).
9	7, 15	----	----	----	
10	19	----	----	----	
11	14	----	----	----	
12	9, 10	----	----	----	<i>NB</i> , <i>Girg.</i> is a variant with lozenge cross-hatched [instead of blocked.

Reference No. in Plate XX.	Reference No. of Vase in Plates XVIII-XIX.	Girgenti.	Syracuse.	Cyprus.	Cyprus: References to Early Iron Age Analogies.
13	2, 5, <i>PR</i> .....	.....	.....	.....	<i>CMC</i> , 1118, 1169, 1190; <i>Brit. C</i> 254, 285, 380;
14	20, 21 .....	.....	.....	.....	[<i>NY</i> , 981, 1033, 1137, 1181; <i>LPC</i> , xlvii, 40; <i>APC</i> , fig. 238.
15	4, 19 .....	.....	.....	.....	<i>CMC</i> , 1156, and commonly.
16	4, 16 .....	.....	.....	.....	<i>CMC</i> , 1167.
17	1, 2, 4, 16, 17, 19, 21, <i>PR</i> .....	.....	.....	.....	<i>CMC</i> , 1140; <i>Const.</i> 949, and commonly.
18	2, 8, 19, 21, <i>PR</i> .....	.....	.....	.....	<i>NY</i> , 952, 1873; on triangle, 623, 823, 1873.
19	10 .....	.....	.....	.....	<i>Brit. C</i> 178.
20	2, 4, 18, 20 .....	.....	.....	.....	<i>APC</i> , xix, 28.
21	11 .....	.....	.....	.....	<i>CMC</i> , 910, 911, 919, etc.; <i>Brit. C</i> 112, 113, 116, etc.;
22	15 .....	.....	.....	.....	[<i>Vienna</i> , 74; <i>NY</i> , 967, 1925; <i>KBH</i> , xcvi, 1a;
23	16, 17 .....	.....	.....	.....	[<i>clii</i> , 21; <i>clxxvii</i> , 2; <i>clxxix</i> , 1; very common, and characteristic of earliest Iron Age in Cyprus.
24	17 .....	.....	.....	.....	<i>KBH</i> , xcvi, 1c.
25	20 .....	.....	.....	.....	<i>Brit. (Exc. fig. 151, 6; 152, 1).</i>
26	1, 2, 16, 17, 18, 20, 21 .....	.....	.....	.....	<i>Brit. (Exc. fig. 165, 1).</i>
27	1, 17, 19, <i>PR</i> .....	.....	.....	.....	<i>CMC</i> , 989, 990; <i>Vienna</i> , 52, 83; <i>NY</i> , 110, 686, 855, [916; <i>KBH</i> , clxxviii, 1; <i>Brit. (Exc. fig. 151, 6).</i>
28	1, 2, 11, 19, 21 .....	.....	.....	.....	<i>CMC</i> , 1115, 1140; <i>NY</i> , 952 (var.), 1894, 1921; [<i>APC</i> , fig. 242; <i>Brit. (Exc. fig. 151, 1, 2, 4).</i>
29	6, 7, 11 .....	.....	.....	.....	<i>CMC</i> , 1115, 1123, 1142; <i>NY</i> , 1896, 1899; <i>LPC</i> , [xlvii, 40.
30	19, 21 .....	.....	.....	.....	<i>CMC</i> , 1130, 1136, 1140; <i>NY</i> , 676; cf. <i>Brit. C</i> 11, [15; <i>Vienna</i> , 75; <i>APC</i> , xix, 28.
31	21 .....	.....	.....	.....	<i>CMC</i> , 1115, 1141, 1142; <i>NY</i> , 1925.
32	12 .....	.....	.....	.....	<i>LPC</i> , xlvii, 40 (var.).
33	5, 11, 13, 14 .....	.....	.....	.....	<i>Vienna</i> , 101; <i>KBH</i> , ccxvi, 25a.
34	5 .....	.....	.....	.....	<i>CMC</i> , 901b, 966, 1197; <i>Brit. C</i> 102, 175; <i>Vienna</i> , [45; <i>NY</i> , 678; <i>KBH</i> , clvi, 4.
35	7 (var.), 11 (var.) .....	.....	.....	.....	<i>APC</i> , xix, 31.
a	11 .....	.....	.....	.....	<i>CMC</i> , 1115, 1128, 1136, 1196; <i>NY</i> , 1058, 1139, [1920; <i>Const.</i> 102; <i>APC</i> , xix, 11.
b	11 .....	.....	.....	.....	<i>CMC</i> , 1166; <i>NY</i> , 967.
c	13 .....	.....	.....	.....	<i>CMC</i> , 1197.
36	20 .....	.....	.....	.....	<i>KBH</i> , xcvi, 9; 1d.
37	5, 6, 7, 13, 14 .....	.....	.....	.....	<i>CMC</i> , 329, 438, 447, 967, 1128, 1169; <i>NY</i> , 233, 622, [671, 686, 1894; <i>Vienna</i> , 45; <i>Const.</i> 949; [<i>LPC</i> , xlvii, 40; <i>KBH</i> , clxxiii, 19a; ccxvi, 31.
38	12 .....	.....	.....	.....	<i>CMC</i> , 438, 901a, b, 1123, 1142, 1143, 1170; <i>Vienna</i> , [63; <i>Const.</i> 949; <i>LPC</i> , xlvii, 40.
39	14 .....	.....	.....	.....	<i>CMC</i> , 967, 1041, 1042, 1105; <i>NY</i> , 1920; <i>APC</i> , <i>CMC</i> , 437. [xix, 6
40	6, 16, 20 .....	.....	.....	.....	<i>CMC</i> , 901b, 994, 1040, 1046; <i>NY</i> 677; <i>Berlin</i> , 65 (var.) <i>Vienna</i> (1895); <i>NY</i> , 671; <i>APC</i> , fig. 242-3.
41	2 .....	.....	.....	.....	<i>CMC</i> , 1108, 1111 (variants); <i>Vienna</i> , 34; <i>NY</i> , 987, [1220, 1367 (var.), 1950; <i>APC</i> , fig. 241.
42	18 .....	.....	.....	.....	<i>LPC</i> , xlvii, 40.
43	2 .....	.....	.....	.....	<i>NB. the Syrac sp. is a more oblique cross of lines</i> [like 25.
44	5, 7, 11 .....	.....	.....	.....	<i>CMC</i> , 1141; <i>Vienna</i> , 64; <i>NY</i> , 537, 1926; <i>LPC</i> , [xlv, 33; <i>APC</i> , fig. 238, Pl. xix [28; <i>Brit. (Exc. fig. 155, 4).</i>
45	5, 6, 7, 10, 12, 13, 14 .....	.....	.....	.....
46	3 .....	.....	.....	.....
47	11, 12 .....	.....	.....	.....
48	13, <i>PR</i> .....	.....	.....	.....
49	9, 10, 13, 14 .....	.....	.....	.....
50	5, 12, 13 .....	.....	.....	.....
51	6, 10 lozenge, 13, <i>PR</i> .....	.....	.....	.....
52	6 .....	.....	.....	.....
53	20 .....	.....	.....	.....
54	20 .....	.....	.....	.....
55	20 .....	.....	.....	.....
56	4 .....	.....	.....	.....
57	5, 6, 8, <i>PR</i> .....	.....	.....	.....

In addition to these resemblances of ornament, the following similarities of form may be noted as tending to confirm the inference that it was a style of pottery-ornamentation which was being imitated.

- (1) With the rim of Nos. 1, 2, and 4 and of Nos. 17-21, compare *CMC*, 1108-1135, 1140, 1141, 1170, 1175, and numerous others not figured in the plates of that book. This rim does not seem to recur in Hellenic, or Græco-Roman, or Arab pottery; on the other hand it is found regularly in the Punic pottery at Carthage (unpublished).
- (2) With the bulged neck of Nos. 1, 2, and 4, compare *CMC*, 982, 1073; *Brit. C* 122, 124, 125; *Ashm. Cypr.* 442; *KBH*, lxxiv, 5, and the whole class of vases described in *CMC* as "handle-ridge jugs" (*CMC*, 990, 994, 1005, 1006, 1073, 1091, and Index, s.v.; *Brit. C* 192, *LPC*, p. 405, fig. 17). It begins in the Bronze Age, as a gourd form (*CMC*, 255; *Brit. A* 58, *C* 11, 15); disappears in the sixth century B.C.; and does not reappear in pottery of Hellenistic styles, except on the Syrian coast, where it is endemic from the Bronze Age to modern times. It is common in the Punic pottery at Carthage.
- (3) With the peculiar set of the handles, hardly above the centre of gravity of the vessel, in Nos. 2 and 17-21, compare *CMC*, 1188, 1190, 1283; *Brit. C* 189; *KBH*, clxxiii, 19k. This form also is endemic on the Syrian coast; but as it also appears in the Sicilian fabric, its importance must probably be discounted.
- (4) For the small horn or thumb-rest, on the handles of Nos. 7, 8, 16, 18, compare *CMC*, 901, 901b, 1101, 1103, 1141; *LPC*, Plate II; and very commonly. In Cyprus this "horned handle" comes right through from the pre-Mycenaean Bronze Age (*CMC*, 91, 92, 111, 126, 209, 344, and Index, s.v.); but it is also of early occurrence in the Early Bronze Age of the West (e.g., at Castelluccio, *B.P.N.* XIX, Plate v, 1, 18, 32); so it need not be of Levantine origin exclusively.
- (5) With the swollen body-form of No. 2 compare *CMC*, 1283.
- (6) With the form of No. 15 compare *CMC*, 937.

In view of this long series of correspondences between characteristically Cypriote and characteristically Kabyle motives, it seems reasonable to infer that some part at all events of the peculiarities of Kabyle vase-form, and also of Kabyle geometrical ornament, originated from contact with a geometrical style introduced from the Levant by Punic settlers between the ninth and sixth century B.C. True, the imported vases and the local Punic fabrics were wheelmade; and in the lowlands the wheelmade wares probably extinguished the handmade fabrics as completely and as rapidly as had been the case in Bronze Age Sicily; but it does not seem impossible that, in the highlands of the interior, geometrically-ornamented vessels may have been traded, and imitated, without this acquaintance with the finished product involving the discovery of the process of manufacture.

It would thus be possible to explain the transference, into a handmade fabric, of wheelmade forms like the necks and rims quoted above, as well as of elements of surface-decoration, when the two styles of ornament were in any case so nearly allied.

Since Punic times, on the other hand, there has been no great decorative ceramic style in close contact with the North African coast-land; and consequently no supersession of the fashions introduced, or emphasized, by the Punic culture of the Early Iron Age. Sicilian Greeks came not; and neither Romans, nor Arabs brought with them any great wealth of decorative pottery; and we have already seen, in the case of Tripoli, how such fabrics as they did introduce have failed to touch the traditional native process, except when they were strong enough to extinguish it altogether.

The net result, then, of our investigation may be summed up as follows:—

- (1) The handmade fabrics of Kabylia are survivals from pre-Carthaginian times; for they are handmade, whereas the Punic settlers of the Early Iron Age came from a wheel-using area, and brought the wheel-fabric with them.
- (2) The red-faced fabrics of Kabylia descend directly from the widespread red-ware of the Neolithic Age; and present marked analogies with the white-painted red-ware of pre-dynastic Egypt.
- (3) The geometrical decoration of Kabylia descends ultimately from the endemic geometrical art of North Africa; but presents signs of contamination with a non-African style.
- (4) The geometrical decoration of chalcolithic Sicily descends likewise from the geometrical art of North Africa; the influence of which seems also to be traceable even in Italy and Liguria: but in Sicily marked deviations have resulted from contact with the curvilinear art of the Ægean Bronze Age.
- (5) The white-faced fabric of Sicily seems to have been introduced ready made from North Africa: and that of Kabylia to have resulted from contact, in the later Bronze Age, with the "white-slip ware" of the Levant: this contact being probably due to pre-Carthaginian adventurers from the Syrian coast.
- (6) The decorative scheme of the "white-slip ware" was not relatively rich enough to influence the endemic North African style: the fabric, however, being handmade was capable of *influencing* the native fabric without extinguishing it. Hence the introduction of a group of handmade "white-faced" fabrics in the West.
- (7) The introduction of wheelmade fabrics in the West resulted (a) in Sicily, in the total extinction of the painted handmade fabric early in the Bronze Age: (b) in North Africa, in the extinction of the handmade fabrics in the Early Iron Age in the lowlands. The inaccessible character of the interior, however, permitted the survival of the handmade fabrics of Kabylia.

- (8) The fact, however, that at the period of colonization Punic art (as illustrated in Cyprus, on the Philistine coast, and at Carthage) was itself elaborately geometrical, permitted much contamination of the painted styles, and even of the pot forms, of Kabylia, without involving the extinction of the handmade fabrics in their highland citadels.
- (9) No ceramic invasion has occurred since Punic times competent either to extinguish or to contaminate the survivals of the old North African ceramic which outlived the Punic settlement.

The tentative and hypothetical character of this investigation will have been apparent, I hope, throughout; and I venture to conclude by putting a few questions which will summarize the points of greatest obscurity, and perhaps may serve to elicit definite answers from those who know North Africa and its neighbourhood in detail, or have opportunities of making further enquiries.

- (1) What direct evidence exists, or can be found, as to the history of the "white-faced" style in North Africa? Note should be taken of the occurrence of such fabrics of pottery on sites of every period, both within and without the modern limits of the style.
- (2) What styles and fabrics of pottery are found on the sites of the earlier Punic settlements: especially round Hadrumetum, Hippo Zarytus, Utica, and Hippo Regius. At Carthage too search should be made, even on the surface, for Punic and pre-Punic potsherds: and for earlier tombs than those excavated hitherto.
- (3) Search should be made in Eastern Algeria, and in Khoumiria, for traces of former or recent extensions eastward of fabrics analogous to those of Kabylia: and in the west of Sicily, for westward extensions of the art-province of Girgenti.
- (4) In Malta, systematic observation, and if possible some excavation, on the early sites in the Bengemma Hills, and round Rabato; as well as in the neighbourhood of Hagiar Kim and Marsa Scirocco. Especial note should be taken of white-faced fragments like those in the Rabato Museum.

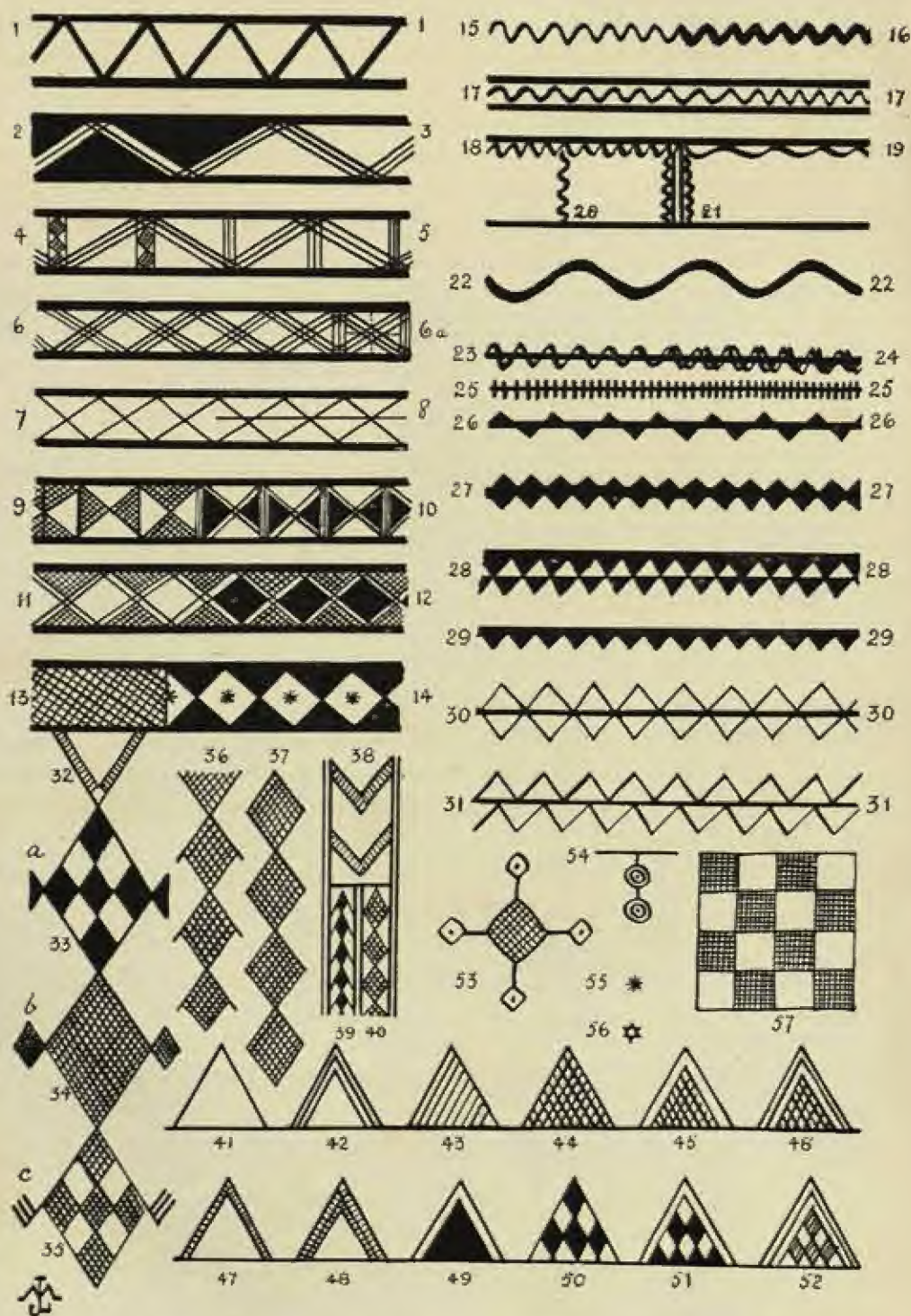


DIAGRAM OF THE ORNAMENTS OF THE WHITE FACED FABRIC OF KABYLE POTTERY.

N.B.—In No. 52 the small lozenges should be cross-hatched as in No. 35.

NOTES ON THE CUSTOMS OF THE TRIBES OCCUPYING MOMBASA SUB-DISTRICT, BRITISH EAST AFRICA.

BY H. B. JOHNSTONE.

FROM November, 1898, till November, 1899, I acted as assistant collector at Rabai, in the British East Africa Protectorate, and the most important part of my duties consisted in hearing civil and criminal cases among the natives. The people with whom I dealt were practically pure savages, and in many cases I was the first European they had seen.

I have endeavoured to confine myself to what I ascertained through my personal contact with the surrounding tribes, but I feel myself bound to state that had it not been for the help of my predecessor, Mr. A. C. Hollis, a keen ethnologist, and of the missionaries, French, German, and British, who worked around my headquarters, I should probably have passed unnoticed some of the few points on which I have remarked.

The district is occupied by four large and three smaller tribes, the Wa-Duruma, Wa-Digo, Wa-Kamba, and the Wa-Rabai, and the Wa-Kambe (to be distinguished from Wa-Kamba), Wa-Jibana, and Wa-Ribe, in the order of their numbers of population in the Rabai sphere. Of these the Wa-Ribe are said to be the most ancient, and the parent tribe of the Wa-Rabai and Wa-Jibana. They are decreasing in numbers, only approximately two hundred pure-blooded members remaining at the present day. The Wa-Kamba are emigrants from the western province of Ukambani, and settled in my district at the commencement of the last century, to act as middlemen in the cattle trade between their up-country relatives and the Coast Arabs. The Wa-Duruma claim descent from the Makua soldiers brought to Mombasa from Mozambique by Vasco da Gama in the fifteenth century, but are closely allied by intermarriage with the Wa-Digo, the indigenous tribe which inhabits the adjoining territory. The Wa-Kambe, who live in a village beautifully situated in a forest near Ribe, declare themselves to have come from Taita, the country east of Kilimanjaro, but I have had little opportunity to inquire into their laws and customs. The Wa-Jibana are closely allied by blood to the Wa-Ribe and Wa-Rabai.

I became more familiar with the customs of my nearest neighbours the Wa-Rabai tribe than with those of any of the others, but the customs of the Wa-Ribe seem to be similar.

The only idea of landed property in East Africa seems to be that the tribe owns the district which it occupies. This right of occupation is assured by usage and is generally respected. The Duruma inhabitants of Zamburu and Maji Chumvi, to the extreme west of the tribal territory, declare that the strip in which they are now settled was bought, within the last fifty years, from a neighbouring community, but at present the land among them cannot be bought or sold. For instance, prior to my arrival at Rabai, there had been a dispute between the Wa-Duruma and Wa-Rabai concerning their boundary, when the one tribe indignantly demanded of the other that they should point to the graves of their fathers on the debatable ground. As far, however, as the individual is concerned there is no proprietorship of ground. The Wa-Rabai, and presumably the other tribes along the Equatorial East African coast, consider mankind the issue of a union between earth and sky, and so regard it as impossible to traffic over a semi-divine mother.

Both my predecessor and myself were anxious to purchase the trees, cocoanut palms and mangoes, immediately surrounding the Government bungalow, hoping thus to establish a claim to the ground itself on behalf of the Administration. A native elder, however, with whom I was on very friendly terms, informed me that the transaction was impossible, it being contrary to custom to sell growing trees. On my pointing out that the Church Missionary Society had bought many cocoanuts near the village, he replied that in reality the owners had only mortgaged them, but had been afraid to reclaim them from a white man, and assured me it was as impossible to sell anything rooted in the earth, as the earth itself, insinuating that trees were regarded as the offspring of the same union as mankind. Subsequently I had to deal with several most complicated cases occasioned by the repayment of mortgage money on trees after a lapse of three or four generations.

A complaint was brought to me shortly after my taking up my residence at Rabai, regarding a man who was felling trees to cultivate a new plantation behind his village, this being forbidden by native law. I imagine there was a current of the same idea in the prohibition, though the Rev. A. G. Smith, of the C.M.S., told me that trees surrounding a township were looked upon as the habitat of its tutelary spirits.

Touching the sky directly, all that my elders could or would tell me was that during years of drought, gatherings were assembled in which the protection of the heavens under the name of "Father" was invoked, and it was asked what had been done that mankind should merit such a visitation. I was told the words of the ritual, but unfortunately did not record them. They greatly resemble those quoted by Bishop Callaway in his book on *The Religious System of the Amazulu*, p. 92, and, as with the southern Bantus, their full meaning has long been forgotten. The word "Mulungu," by which the missionaries render our word "God," means equally "Sky," and the most solemn native oath consists in raising the right hand and pronouncing the words "Mulungummoja" ("One Mulungu").

Many of the Wa-Rabai object to drinking cow's milk, regarding its use as robbery of the calf.

The Wa-Rabai and Wa-Ribe exhibit an extreme dread of the "Evil Eye," and charms are worn on every limb to counteract it. These usually consist of the horns of the smaller antelope. A lion's claw is reputed a most powerful protective against every kind of illness, and a band of a particular fibre worn on the right upper arm, insures immunity from dangers while travelling.

I ascertained that a type of secret society exists among the Wa-Rabai similar to that which Rev. W. E. Taylor describes in his *Vocabulary of the Giryama Language* as existing among the Wa-Giryama, whose territory bounded my district to the north. The highest degree among the Wa-Rabai is that of "Fisi," or "Hyena." From the members of this are recruited the medicine men, who have the power to cast spells of which the result is fatal. The regulations respecting the wearing of the loin cloths also resemble those mentioned by Mr. Taylor, but as the natives are extremely reserved on this subject I failed to discover whether all the grades and fees are identical with his description.

The hyena is almost universally regarded as a sacred animal in Equatorial East Africa. Among the Wa-Kamba the dead, with the exception of an elder, are thrown into the bush to be devoured by that animal. The elder is buried at the door of his hut. Mr. Hollis was inclined to believe that an honour was thus paid to the departed in that he became an integral part of the venerated object, but considering the different usage in the case of the elder, and the fact a M'Kamba will often pay a M'Giryama to carry away and clandestinely bury the body of a deceased relative, I rather imagine the practice is pursued for purposes of pacification.

The hyena also has magical powers. Rev. A. G. Smith made preparations to intercept a hyena which visited his henhouse, but his native servant assured him "It would be useless your trying to shoot the hyena; he can make medicine to prevent you."

Certain birds are regarded as malevolent. If a child is ill the sickness is usually attributed to the influence of a bird.

Spells are greatly feared. One of the Rabai elders, Mzee Kanga, slaughtered twenty of his cattle at the advice of his medicine man to avert a spell cast on his village by an unfriendly M'Kamba. A man was accused before me in court of the murder of a woman; but in the preliminary inquiry I discovered that the crime had been perpetrated by the casting of a spell, after which the victim sickened and died.

The case of a fray during a dance brought some interesting facts to my notice. The daughter of one of my elders had been possessed of an evil spirit, and her father consulted the medicine man as to her condition. The seer sent her into a trance, and while she was lying unconscious, the spirit spoke through her mouth, saying he would leave her, were a dance given in his honour. The father was at the time too poor to hold the dance, which entailed expenses in

palm toddy and rewards to the performers, but he undertook that it should take place in three months after the harvest of his maize. The spirit then, on his side, promised to desist from tormenting the woman; but when the dance took place it was interrupted by the fray, which, in the native's eyes, accounted for the fact that the young lady still appeared afflicted when she was brought before me. I was at first inclined to prohibit the continuance of the gathering, but this struck my friend Mzee Kavu as very unfair; the girl's father, he said, had made a promise which was binding, and the Administration would be acting badly if it prevented in any way its being fulfilled.

The Wa-Rabai possess a sacred drum called the "Mwanza" preserved in the custody of certain old women. None but the authorized persons may behold it, all others, even native Christians, covering their eyes if by any chance it should be exposed to their view. It is made of a hollow tree trunk about six feet long, four times the length of the usual native instrument.

Divination is practised by means of grains of millet or Kaffir corn, which are cast on the ground from a calabash by the medicine man, but I have never witnessed the ceremony.

The new year is inaugurated with fair regularity in September after the maize crops have been reaped. It is ushered in with a week of dancing, the natives anointing their bodies with castor-oil, and covering their limbs with brass and copper jewellery. As the dancing continues night and day, naturally fires are lighted, but I am not aware whether any ceremonial attends their kindling. I could in fact discover no superstition with regard to fire; but the natives are reticent on this head.

The year is marked with tolerable distinction by the rains. In the middle of April, with the change of the monsoon, the heavy rains, Mwaka or Masika, commence and last approximately one month. In August there is a further week of showers, Mchoo, and a fortnight in November, Vuli. Beyond the seasons of rain the average native has little idea of the lapse of time. Epochs are marked by various far-reaching events, such as wars or famines, the arrival of the white man at Mombasa, etc. In periods not exceeding five years the date is usually fixed by the number of harvests which have been gathered. They do not calculate time beyond this, and it is impossible to discover the age of any adult.

In cases of marriage the dowry is first arranged by the bridegroom with the family of the intended bride. Before leaving her paternal abode the young woman must cook food and send it to her betrothed. This custom practically prohibits child marriage, as girls do not learn to cook before the age of twelve or thirteen. On the wedding-day the bride is led by her paternal grandmother or, failing her, by the aunt whose name she bears, to her future husband's hut. One of the most essential points in the conclusion of the matrimonial arrangements is that her conductor must see with her own eyes what has been

¹ Cf. Krapf, *Travels in S. Africa* (London, 1862).

paid of the bride-money before performing her part of the function, otherwise the marriage is null and void. After the young lady has arrived at her new home the newly married couple keep open house for a period of from three to seven days. The value of what is paid by the husband to the father-in-law is between twenty and fifty Maria Theresa dollars and a number of goats, fowls and jars of palm toddy, varying with the wealth and social position of the contracting parties. The full payment of the dowry often occupies years.

Marriages outside the tribe are discouraged, the elders requiring an assurance of the girl's consent before allowing her departure. This should act as a deterrent, for a girl of thirteen or fourteen is not often willing to change familiar for strange surroundings. In periods of famine however such unions are very frequent, owing to the wholesale migration of a starving tribe into the territory of its more fortunate neighbours.

Few indulge in the luxury of more than one wife, though the number permissible seems to be limited only by the means of the parties. Divorcees, for very little reason, are frequent; the divorced wife re-marries, and the bride-money is repaid by the new to the former husband. If, within a few months of the wedding, the couple find they cannot live together, the father-in-law refunds what he has received.

On the occasion of a death, the body is washed with water and oil, and a dance takes place before the hut of the deceased, lasting for one night. A period of mourning, lasting from three to ten days, is observed by the occupiers of the hut. During this the mourners remain at home to receive long visits of condolence from their acquaintances. In some cases the grave is incensed. Among the Wa-Ribe and Wa-kambe the bodies of all deceased tribesmen are brought to their capital for interment from any practicable distance, and, as it is inauspicious for a corpse to pass the village gate, those who die without and those who die within are buried close to the stockade, but on their respective sides, the grave in each case being marked by a rudely carved head stick.

Inheritance among Wa-Ribe and Wa-Rabai is by male primogeniture. If, at the time of his succession, the heir is still under years of discretion, the estate is administered by the eldest surviving paternal uncle, who even during the father's lifetime is called the "Baba mdogo" or "Little father." Any wives of the deceased are considered as part of the property, and should a re-marriage take place, the dowry is paid to the new owner; but, I have reason to believe, a son never lives as husband of any of his father's widows.

Members of the Wa-Ribe and Wa-Rabai hold the strongest objection to prejudicing the rights of their presumptive successors. The M'Rabai on whose plantation, with the consent of its possessor and the permission of the elders of the district, the Government built the Administration bungalow, refused to sell or mortgage his trees, though he subsequently voluntarily surrendered their usufruct. The reason for his action, he explained, was that he might avoid damaging the interests of his family, and on this account he resolutely refused to accept any

indemnity for the relinquishment of his rights. In constructing a road from Rabai to the nearest station on the Uganda railway, I was obliged to carry it through several plantations, and in every case the occupier told me that, though he consented to, and received monetary compensation for its passage through his field, the agreement did not apply to his successors.

On the occurrence of a murder, two children, a male and a female, used to be paid by the perpetrator's family to that of the victim, in addition to blood-money varying with the age and rank of the deceased. The elders declare that now, owing to the advent of the white man, a fixed sum has been substituted for the human compensation, but it is extremely difficult to verify this statement. From the days of the inauguration of the East Africa Company great vigilance has been exercised with regard to any kind of slavery in the territory under British administration, and the coast tribes nourish a certain dread of the European which might equally well have led to the abolition of the custom, or the concealment of its existence.

By native law the cultivator is entitled to kill any individual who enters his plantation or "shamba" after dark, without the fear of being called upon to pay any kind of blood-money. The charm against plantation-thieves consists of an inverted calabash on the end of a short stick, the other extremity of which is driven into the ground. With these the "shamba" is usually surrounded.

The ceremony of blood-brotherhood consists in inflicting a small wound on both of the parties to be so connected and applying a few drops of blood from the wound of one to that of the other. After this their property is treated as being held in common, and I have even seen a case of a wife being taken by a blood-brother, though I believe that this is unusual.

During a smallpox epidemic I noticed that all were unwilling to pronounce the word "Ndui," the native name of the complaint. It was referred to either as "Tete," "Grains of corn," or simply "Ugonjwa Ubaya," "The bad disease."

I heard of several cases of persecution for stopping the rains during my residence. When it became apparent that the calamity weighed equally heavily on all, it was believed that the white man had "made medicine" to withhold any interruption to the construction of the Uganda railway. There is a spring on a hill a mile from my bungalow. The year before my arrival it had ceased to flow. On consulting the medicine man the elders discovered that some person had dipped a tin vessel into its stream, and this had offended its guardian spirit. Accordingly a wooden grating was placed over it, through which only a small calabash could pass, and with the next rains the flow recommenced.

The Wa-Kamba are said to have settled approximately in the stretch of territory called Werumi for purposes connected with the trade in cattle, which is carried on between their parent tribe in Ukambani and the Swahilis on the coast. The Wa-Kamba of Ukambani are known in the Protectorate for their craftiness, and though I could put little credence in what I was told by a M'Kamba, I ascertained the following facts through the suits heard before me and with the

help of the Rev. F. Pfitzinger, Lutheran Missionary to the tribe, and the Rev. A. Boulé of the Roman Catholic Mission to the Wa-Giryama.

I have already alluded above to the disposal of the dead. Beyond this they exhibit an extreme dislike to touching a corpse. During the famine of 1898-1899 I issued regulations that in the market-town of Rabai, the members of each tribe should be considered responsible for the burial of its indigent dead, but I was obliged to cancel the proclamation, owing to the impossibility of enforcing its observance. Should a relative sicken he is promptly deserted, unless he be an elder, when he is carefully tended. During an epidemic of smallpox a M'Kamba mother in the isolated camp had to be forcibly prevented from killing her six months' old baby, and the next day she disappeared leaving the infant behind. Though her behaviour may have been due to delirium, I believe that it was owing to tribal prejudice against being with the sick. On the other hand, on the development of the disease by a prisoner of this nationality, his old and infirm mother came a seven hours' march on foot to offer herself as a hostage, should he be permitted to return to his village and there seek to effect his recovery.

In September, 1899, I visited a hamlet, and was about to enter through the gate by which I had passed on a previous occasion, though I noticed that the branch of a tree seemed to have fallen across it. The elder held me back, begging me to walk round the stockade and come in by the gate on the other side. So many deaths due to starvation had lately occurred round the front entrance that misfortune would certainly attend anyone crossing its threshold.

In Ukambani the Wa-Kamba are said to possess a form of trial by jury. I cannot affirm with certainty whether this exists in Werumi, but judging by the able defence an accused will make on his trial, he must have been trained in a trial where he obtains a fair hearing and where his judges are open to conviction. He has a delicate idea of justice, and bitterly resents any sentence the motive of which is not superficially apparent.

A feature of the form of oath administered to prosecutors and witnesses in my court, was the swallowing of a pinch of dust by the party sworn, to typify what should be his food, should he not speak the truth. Oaths sworn before me, however, did not appear to be binding. The solemn oath of the tribe had to be undertaken in the presence of the elders, and in it every kind of malady was invited to visit the heads of the swearer's family were his words not strictly in accordance with facts.

The tribesmen live in small communities of six or seven villages, grouped together for the sake of a supply of water. In each hamlet the elder is practically supreme, though almost powerless beyond its stockade. The community is governed by a council of all its notables, in which the will of the majority is sovereign. In Ukambani the cultivated area around a hamlet is held in common among the villagers, but this is not so in Werumi.

The influence of the surrounding tribes has exerted itself with regard to marriage. In Ukambani marriage is said to be by capture, but round Rabai the payment of the dowry commences before the bride leaves her home.

Their medicine men are unusually skilled, and are greatly dreaded by the surrounding tribes, both for the spells which they cast and the poison they manufacture. The poison is peculiarly deadly, and its ingredients are a secret jealously guarded. The result of an arrow wound is death in about ten minutes. The victim exhibits symptoms of tetanus, though medical men doubt whether true "lock-jaw" follows its infliction. The tribesmen possess a powerful antidote to the venom, which is equally efficacious against snake bites. I have witnessed a recovery from each by its means. At the time the wound is received the medicine is applied externally, but natives assert that to insure recovery the patient must have been used to swallow it at intervals from early youth.

I possess a quiver full of poisoned arrows, slung with a quill of the antidote, charms and ostrich feathers. Among the contents of this is a "fire-stick" (fire is kindled by all the East African natives I have met, by friction); this particular one is elaborately ornamented with a species of "chip-carving," in which the form of a snake occupies a prominent place. It is stained in symmetrical points with red ochre, and its workmanship suggests to me that some ceremonial must attach to its use, though I have not discovered any superstition with regard to fire. Members of the tribe do not ordinarily expend care on the ornamentation of articles of daily use, with the exception of their arrows, and stools, the property of their elders. Their fire-places, of three small upright stones, always occupy the exact centre of their circular huts.

Their arrows indicate careful workmanship. The minutely pointed and barbed head, beaten out of steel wire, is fitted into a narrow slit in the shaft. The portion immediately below its insertion is daubed with the black glue-like poison, which, when not in immediate use, is enveloped by a fine strip of hide. The remainder of the shaft is adorned at intervals with parti-coloured fibre and terminated by its three "wings."

I found that the path leading to the hut of certain delinquents whom I attempted to arrest was strewn with small charms, woven out of fine grass. The object of this was to bring failure on the expedition.

My M'Kamba herdsman wore a charm on every limb to protect him from the spells of his fellow-tribesmen, who, as he expressed it, "were very bad people."

Though an exceptionally moral tribe, the males seem never to have eaten of the "Tree of knowledge." Their only clothing is a piece of calico, used as a blanket at night, thrown over one shoulder. The women are clad in a piece of cloth falling from the waist to below the knee.

With the other tribes any load borne on the back is attached by a strip of cloth round the chest or throat and over the shoulder, with the Wa-Kamba a leather passes across the forehead and down the back of the neck.

They are said to practise infanticide in certain cases. All I could discover was that if an infant cut its lower before its upper teeth it generally "died," since the suckling was painful to the mother. They appear devoted parents until their offspring have reached a responsible age, but Mr. Pfitzinger has told me that slave

trade exists among them and that they dispose of any surplus by its means. In the worst period of the famine, I had to deal with constant cases of kidnapping from the surrounding tribes.

The main wealth of the tribes consists in their cattle, over 100 head being often possessed by one individual. Bees are kept, small hollow trunks, resembling tubs, being hung in the higher trees for the reception of the swarms. Castor oil, the cultivation of which requires little labour, is grown to a fair extent, also a small amount of Kaffir corn. Cattle, honey, castor oil and toddy from the dôm palm are the prominent factors of the marriage dowry.

No man may behold his mother-in-law. If he hears she is coming along his path he will make any detour to avoid meeting her.

Their eye-teeth are filed into sharp points. This adds an almost cannibal feature to their already unprepossessing physiognomy.

Fines for theft are very heavy; a sheep being the minimum for the first offence. Though they have the name of being robbers and murderers with the other tribes, I am inclined to imagine that among themselves they are comparatively honest.

On my first visit to Kikamba Werumi the elder of the hamlet where I camped presented me with a goat. Among other tribes a return gift is expected, but on my offering him a sum of money he refused, saying it would injure his reputation were he to accept a price for his hospitality.

On another occasion a starving M'Kamba woman passed my bungalow and received food. Before leaving it she produced about an ounce of native tobacco, wrapped in a dry leaf of maize, which she begged me to accept in return.

They have no words which express any number larger than ten. They compute higher calculations on their fingers, and indicate them to a second person by their position. For instance, two fingers of the left hand placed across the palm of the right hand multiplies five by two.

The Wa-Digo occupy a long stretch of country to the south of my former headquarters, extending through the adjoining British Political District well into German territory.

According to their laws of inheritance a son never succeeds his father, the estate becoming the property of the nearest male relative in the female line, generally the grandson by the eldest daughter.

They have a distinctive manner of burying their dead. No earth must fall on the corpse. A grave 6 feet deep is dug, at one side of it a chamber slightly larger than the body is made, in which the corpse is placed. The chamber is then closed with a screen of matting and the remainder of the grave filled in.

Marriage is by capture, the young couple coming beforehand to an understanding with regard to its time and place. After the bride is in her husband's house the payment of the dowry is commenced.

My cook, a M'Digo, assured me that no form of slavery ever existed among his tribesmen. Even after a murder, when the usual substitution of a boy and a girl for the murdered man takes place, they never occupy any position of servitude,

but became members of their new family, even being allowed to revisit their blood relations. But I found that many of the children kidnapped by the Wa-Kamba in 1899 passed through Digo hands. This, of course, was under the stress of famine, and is probably exceptional.

The customs of the Wa-Duruma, who claim descent from the followers of "Bwana Kigozi" (Mr. Little-Skin, *i.e.*, Vasco da Gama) are very similar to those of the Wa-Digo, to whom they are closely connected by marriage. The tribe is settled over a wide territory extending fifty miles to the west of Rabai, and their customs vary much with the locality. As with the Wa-Digo the son is not the heir, but in some parts the brother, in others the grand-child through the daughter.

I was unable to ascertain the existence among them of any superstition or rite connected with fire. I was told that though, when starting on a war-like expedition, there was no ceremony, in case of giving the alarm to the enemy, the fighting men were summoned by the blast of a particular small horn.

Marriage is by capture. An indispensable feature of the dowry is a number of jars of cocoa-nut palm toddy from Mombasa or its plantation Changanawe. The necessary money is always paid in Maria Theresa dollars, not rupees.

The music and dancing of the Wa-Digo seemed to differ from that of the other natives, and their huts were more roomy, holding a sort of loft for the storage of grain in the roof, consisting of a ceiling of matting to the living room, entered by a neatly constructed trap-door.

The practice of the Wa-Kambe in the burial of their dead is similar to that of the Wa-Ribe. No corpse may pass the gate, and each grave is marked with a carved stick.

The huts of the elders differ in shape and size from the others, being high and circular, raised on a platform of daub about 2 feet above the ground, while the rest are comparatively low and oblong.

They seem peculiarly moral. The first case brought to me from the Kambe country was concerning the murder of a girl, who preferred death to dishonour. Later on I heard a case dealing with a wife who had taken refuge with her "*ndugu*" from the harsh treatment of her husband. The latter accused the relation of living as the husband of the runaway. The accused replied, "Has it ever been heard in the whole world that a man has married his *ndugu*?"

Jibana is built on the summit of a hill 600 feet high, thickly wooded, and is most difficult of access. The gate of the stockade at Jibana is hung with various charms. When I visited it I entered by an accidental opening in the enclosure. When we were leaving my native officer was about to pass through by that way, when he was restrained by one of the elders, who told him that a charm was hanging from the gate which insured instant death to any who left the village by another exit. "But," said the officer, "my master came in through this."

"It does not matter for a white man," replied the elder, "the medicine will not act against him, it is for you I am afraid."

¹ *Ndugu* is a very wide term, including brothers and sisters, first and second cousins, and blood-brothers. In this case the *Ndugu* were first cousins.

RIGHT-HANDEDNESS AND LEFT-BRAINEDNESS.

The Huxley Lecture for 1902.

BY D. J. CUNNINGHAM, M.D., D.C.L., F.R.S.

[PRESENTED OCTOBER 21ST, 1902. WITH PLATES XXI-XXII.]

THAT I should have been considered worthy to be entrusted with the honourable task of delivering before the Anthropological Institute the third Huxley Memorial Lecture has afforded me the deepest gratification. At the same time I do not think that I am wrong in believing that in making the selection of a lecturer for the year 1902, the Council of the Institute have been largely and very properly influenced by the desire that Ireland, where Huxley was so well known and so greatly esteemed, should at an early period be represented on the list of those who are called upon to discharge this duty.

It is not for me to enlarge on Huxley's life and Huxley's work. In the first lecture of the series, this has already been done in the most charming and delightful manner by Lord Avebury, his personal and intimate friend. I feel sure, therefore, that I shall best fulfil the wishes of the Institute by proceeding at once to deal with the subject which I have chosen for this address.

For two thousand years, or even more, the problem as to how man acquired his preference for the use of the right arm has been discussed. A characteristic so marked, not only in the performance of the nicer manipulative acts, but also in the carrying out of work which requires a special display of strength, could not long escape the attention of the earlier philosophers. Many have attempted the solution of the problem; of these some have given it up as a hopeless task and pronounced it insoluble, whilst others, with less diffidence, have satisfied themselves that they have discovered the key which lays bare the conditions upon which right-handedness depends. After the fashion of most controversies of the kind, the discussion has not pursued an even or continuous course. Periods of quiescence, during which interest in the subject would almost appear to have died out, have been followed by periods of active eruption, during which theories, which are for the most part old, have been brought to life again and paraded under a slightly altered attire trimmed to suit the fashion of the day. There cannot be a doubt, however, that gradually a truer perception of the condition has been gained, and, if many important points still remain obscure, much that is interesting has gathered around the subject.

It may appear strange that for this address I should have taken a subject which might almost be said to be hackneyed, but I have been induced to do so on

account of the great general interest which it presents to every student of anthropology—no matter what branch of this many-sided science he may be specially engaged in. The physical anthropologist cannot lay claim to the subject as one which concerns him alone. Language, social and religious rites and man's handicrafts through the whole period of his existence have been profoundly affected by the supremacy of the right hand. The workers in these different fields of anthropological activity are all alike concerned in the study of the problem.

To man living as he does in communities, and from the most remote periods engaged in different kinds of manual co-operative work, the advantage which must have proceeded from one arm being given a preference over the other cannot but be manifest to every one who gives the subject a moment of serious thought. It has been said¹ that no organized manual labour could be carried on without a common agreement on this point. This is certainly going too far; although I question if anyone could be found who would care to dispute that right-handedness has exercised a most important influence upon the evolution and improvement of the handicrafts of man and has been alike useful in times of warfare and in times of peace.

It is easy to prove that the characteristic is one of vast antiquity. Of this there is the clearest evidence not only in historical records and pictorial representation but also in ancient mythology and in the structure of almost all languages.² The Amazon had the right breast destroyed in order that she might hurl the javelin and shoot the arrow with the greater dexterity; Hercules holds his club and Neptune his trident in the right hand; whilst with the same hand King Rameses adjusts the arrow to the bow. But the remoteness of the origin of dexterity is also attested by the fact that in almost all languages—both living and dead—in those employed by the so-called civilized races as well as in those spoken by the more barbarous peoples, there are words and phrases which indicate the difference between the two sides and often words which express certain general qualities which are supposed to characterize these sides. In our own language we have "*adroit*," "*righteous*," and so on; in French there is "*gauche*" with its equivalent in English "*gawkie*," and in Scotch "*gowk*."

So far back then as history takes us right-handedness would appear to have been a common birthright of mankind. But if we probe the dim obscurities of the past to still greater depths and extend our inquiries to periods antecedent to those of which we have historical knowledge, there is evidence, although perhaps not so clear, that the same preferential use of the right arm was even then a characteristic of man.

¹ By Thos. Carlyle. See *A History of His Life in London*, by James A. Froude. Longmans, Green & Co., 1884, vol. ii, p. 407. Extract from Diary, June 15th, 1871.

² Those interested in this aspect of the question should read: "*Lopsided Generations*," by Dr. Hollis, *Journ. Anat. and Phys.*, vol. ix, p. 263, 1874; and "*Ueber den Ursprung von Rechts und Links*," by von Meyer, *Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte*, Jan., 1873. The illustrations used in the text are taken from the latter paper.

In the delightful account which is given by Canon Greenwell¹ of his exploration of one of the galleries of the famous flint-pits called Grimes' Graves in Suffolk, in which Neolithic man obtained the flint required for the manufacture of his implements and weapons, the author tells us of the discovery of two pickaxes made of the antlers of the stag. These apparently occupied the same position as that in which they had been laid by the neolithic miners when their last day's work in that gallery was finished. The handles were turned towards the mouth of the gallery and the tines were pointing towards each other. From this Canon Greenwell concludes that in all probability these pickaxes had been used respectively by a right and a left-handed man. I imagine that most of us would consider the evidence afforded by the position of these implements as being hardly sufficient to justify us in forming any conclusion on the matter either one way or the other. Anyone who observes the hurried and careless way in which the navvies of the present day throw aside their pickaxes when the dinner-hour is sounded, can easily satisfy himself that they fall very nearly as frequently to the left as to the right.

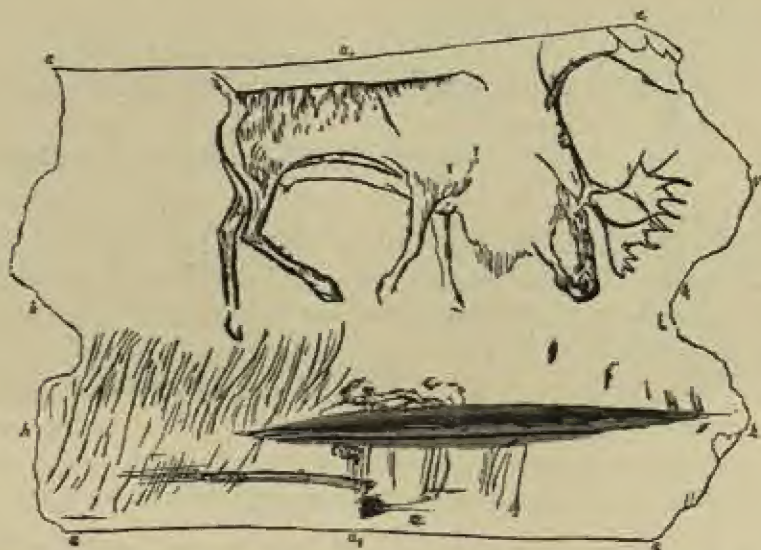


FIG. 1.—THE REINDEER OF THE CAVE OF THAYNGEN NEAR SCHAFFHAUSEN.

From "*Early Man in Britain*," reproduced by permission of Professor W. Boyd Dawkins. Block lent by Messrs. Macmillan.

Equally unsatisfactory are the statements which have been made in connection with the pictorial engravings of the palæolithic cave-dwellers. Referring to the fact that in these sketches the animals depicted sometimes look to the left and sometimes to the right, Sir Daniel Wilson remarks²: "This is a nearly unerring test of right or left-handedness. The skilled artist can, no doubt, execute a right or a left profile at his will. But an unpremeditated profile drawing, if done by a right-handed draftsman, will be represented looking to the left; as, if it were the

¹ *Journal of the Ethnological Society*, N.S. II, 419-439.

² *Left-Handedness*, by Sir Daniel Wilson. Macmillan and Co., 1883.

work of a left-handed draftsman, it will certainly look to the right."¹ A close inspection of all the palaeolithic drawings within my reach has convinced me that the only evidence which can be deduced from this source consists in the fact that in the majority of the engravings the animals depicted look to the left, which in some small degree suggests the idea of right-handedness on the part of the artists: with regard to those in which the profiles look to the right absolutely no proof can be obtained either in one way or the other, and it is absurd to put them down as the work of left-handed artists. Let us take two of the most striking of these pictorial representations, viz., the beautiful engraving of the grazing reindeer from the cave of Thayngen which looks to the right (Fig. 1), and the well-known drawing of the mammoth from the cave of La Madelaine which looks to the left (Fig. 2). The impression which one receives from an examination of the former is that it undoubtedly was depicted from life and that the animal happened to



FIG. 2.—MAMMOTH ENGRAVED ON IVORY; FOUND IN THE CAVE OF LA MADELAINE.

From "*Early Man in Britain*," reproduced by permission of Professor W. Boyd Dawkins. Block lent by Messrs. Macmillan.

be facing to the right at the time the artist was engaged in the work. It is possible that the mammoth is a life-study also: there is nothing to show that it is not, but the probabilities are that our palaeolithic artist would not be afforded the same opportunities for making so close a study of this huge and possibly dangerous model. Even the domesticated bull has been known to considerably discourage the modern artist.

It is most unfortunate that so few of the artistic efforts of the palaeolithic cave-dwellers have been directed to the delineation of man. By such representations alone would it be possible to judge the point at issue. The perforated antler discovered by MM. Lartet and Christy in the cave of La Madelaine, on which

¹ The same observation has been made, although not so emphatically, by Bernard Langkavel. See article on "Rechts und Links," by Prof. Adolph Seeligmüller in the *Deutsche Revue*, April, 1902, p. 56.

there is engraved a human form between two horses' heads, is probably the most conclusive on this point (Fig. 3). The drawing is crude, but from the attitude of the figure and the position of the right upper limb which holds a baton or a stick, right-handedness is certainly strongly suggested. Another engraving discovered by M. Elie Massénet, which represents an aurochs' hunt, admits of little doubt on this point. A nude figure in the prone position is represented stalking an auroch. The hunter is very rudely drawn, but it is possible to make out that the right arm is thrown backwards and on the point of hurling the javelin with which it is armed at the auroch (Fig. 4).



FIG. 3.—PERFORATED ANTLER DISCOVERED IN THE CAVE OF LA MADELAINE (FROM THE ILLUSTRATION GIVEN BY MORTILLET IN *Musée Préhistorique*.)

Reproduced by permission of M. G. de Mortillet.



FIG. 4.—ENGRAVING OF AUROCHS' HUNT (FROM THE ILLUSTRATION GIVEN BY MORTILLET IN *Musée Préhistorique*.)

Reproduced by permission of M. G. de Mortillet.

Few occupations are more fascinating than handling a large series of palæolithic flints and speculating as to the uses to which they have been put. Many of those which were held by the hand appear to be better adapted to the grasp of the right hand.¹ This is the conclusion at which most observers would arrive, and yet it should not be lost sight of that this impression may be altogether deceptive, and due rather to the more efficient way in which the right hand is capable of adjusting itself to the implement, than to the manufactured adjustment of the flint to the right hand.² Mortillet³ figures a flint implement held in the right hand, and points to a depression on its left side which he believes has been intentionally produced for the reception of the thumb. But to my mind the most

¹ In 1883, Gabriel de Mortillet (*Le Préhistorique: Antiquité de l'homme*, pp. 142, 143) states that most of the implements exhumed from the Somme Gravels are better suited to the right than the left hand. Seven years later he expressed very different views in regard to this question.

² I am much indebted to Mr. George Coffey, of the Science and Art Museum Dublin for the assistance he has given me in this matter.

³ *Musée Préhistorique*, par Gabriel et Adrien de Mortillet, Paris, 1881, Pl. ix.

important evidence which I can adduce in connection with this question is the deliberate expression of opinion which I have obtained from Sir John Evans, whose well-known judgment in such matters has gained for him the confidence and the respect of all workers in this field. He writes as follows:¹ "As to the palæolithic implements I think that as a rule they are better adapted for being held in the right hand than in the left. There is often a flat portion of the side which seems intended to receive the right forefinger." Another letter which was written by the same great authority to Sir Daniel Wilson discusses the question from a different point of view, and is yet confirmatory of the general conclusion. It runs thus:² "I think there is some evidence of the flint-workers of old having been right-handed; the particular twist, both in palæolithic implements as in one in my own possession from Hoxne, and in some American rifled arrow-heads, being due to the manner of chipping and being most in accordance with their being held in the left hand and chipped with the right."

Other observers have studied the question from a similar standpoint. In 1890 Mortillet³ tested 354 neolithic scrapers of the double-edged form, and came to the conclusion that in prehistoric times left-handedness was much more common than in our own day and our own regions. His results, indeed, are so extraordinary that we may well be pardoned if we pause before giving them our full acceptance. In neolithic times, in France, he assumes that left-handed individuals were twice as numerous as the right-handed members of the community: or in other words that at this period in France, left-handedness was the normal condition. Dr. Brinton⁴ likewise believes that right-handedness was not so firmly established in early man as it is in the present day. He has studied the manner in which arrow and spear-blades have been trimmed and considers that a greater facility in the dressing of the right side is apparent in the proportion of 3 to 1, and then he goes on to say: "the hand preferred was no doubt the right hand, but the notably large proportion of 33 per cent. for probably left-handed work indicates either that there were more left-handed persons⁵ or as I prefer to believe that there were more who were ambidextrous. This may have been due to the fact that the methods of flint-chipping favoured the development of the use of both hands, but it is likely that it indicates a general physiological tendency." These observations of Dr. Brinton are important, and I am quite prepared to accept his conclusions. In early times before manipulative skill was greatly developed, there is every reason to believe that the difference between the two limbs was not

¹ Letter dated April 15th, 1902.

² *Left-handedness*, by Sir Daniel Wilson. Macmillan and Co., 1883.

³ "Formation des Variétés, albinisme et gauchissement." G. de Mortillet. *Bulletins de la Société d'Anthropologie de Paris*. Tome Prem. (IVe. Series) 3e. Fasc., 1890.

⁴ "Left-handedness in North American Aboriginal Art," by Daniel G. Brinton, M.D. *The American Anthropologist*, vol. ix, May, 1896, p. 175.

⁵ Mr. O. T. Mason very pointedly remarks that as probably stone spear-heads, etc., were made in large numbers by one man, this cannot be regarded as a proper test of the relative proportions of right and left-handed individuals in the community to which the flint-chipper belonged. (*American Anthropologist*, vol. ix, p. 226.)

nearly so accentuated as it is at present, and that there was a much stronger tendency towards reversion to true ambidexterity, or the condition which I regard as being an original characteristic of the stem-form of man.

It is a matter of common knowledge that the more extensive use to which the right upper limb is put reacts upon its development and causes it to assume more massive proportions than its fellow of the left side. Such being the case it is important to inquire whether any observations have been made on the remains of prehistoric man with the view of determining whether the bones of the right arm exhibit a corresponding excess of development. So far as I am aware Dr. R. Lehmann-Nitsche¹ is the only one who has investigated this matter. He has found that the clavicle and the long bones of the right upper limb of prehistoric man of Southern Bavaria are distinctly heavier and more massive than the corresponding bones of the opposite side. This may be regarded as affording positive proof that these early individuals were right-handed.

It appears probable that right-handedness assumed form as a characteristic of man at a very early period in his evolution, and most likely before he became endowed with the power of articulate speech. It is a characteristic of all communities: no matter how remote these are from each other, no matter how isolated they are, it is always the right arm which is raised to the place of higher power and importance. There are few who would dispute that it is a quality which is inherited, and the fact that left-handedness appears to be hereditary and to run in families adds force to this argument.²

¹ "Untersuchungen über die langen Knochen der südbayerischen Reihengraberbevölkerung." *Beiträge zur Anthropologie und Urgeschichte Bayerns*. Band ii, Heft iii, München, 1895.

² Ogle found in 2,000 individuals 85, or in other words four and a half per cent., who were left-handed. Of these 85 there were 12 who had a left-handed parent; and of 57 there were 27 who knew of left-handed relatives. According to the same authority left-handedness is twice as common in men as in women. (Dr. Wm. Ogle on "Dextral pre-eminence," *Med. Chirurg. Trans.*, vol. xxxvi, p. 279, 1871.)

Hyrtl gives the proportion of left-handed individuals as two per cent.

Brinton states that among educated Americans and Europeans the proportion of left-handed individuals is from two to four per cent. (*American Anthropologist*, vol. ix, p. 175, May, 1896.)

Hasse and Dehner (*Unsere Truppen in Körperlichen Beziehung*, "Archiv für Anatomie und Physiologie." Anat. Abtheil., Leipzig, 1893, p. 250) examined 5,141 individuals and only found one per cent. of these left-handed.

O. T. Mason studied about one hundred throwing-sticks, with the result that three were found to be fashioned for left-handed individuals. This is important, as it affords some evidence of the proportion in savage peoples. (*American Anthropologist*, vol. ix, p. 226, 1896.) See also article on "The Throwing Stick" by the same author in the *Bull. United States Nat. Hist. Mus.*, 1884.)

In a letter which I have received from Dr. Haddon, there is the following interesting statement: "Rivers told me that in Murray Island out of a total of 450 there was the same proportion of left-handedness as in Europe. He noticed two left-handed men and one child." Dr. W. McDougall, who likewise formed one of the Cambridge Expedition to the Torres Straits, has also given me some information regarding the Murray Islanders. He states that "in some cases there was very little difference in strength or skill or preferential use of either hand. I

Aimé Péré¹ gives two very remarkable instances of left-handed families: (1) A left-handed man married a left-handed wife. Of the five children which were born of this marriage four were left-handed and one (a daughter) was right-handed. There were also three cousins in this family who were left-handed. (2) A sailor who was left-handed had a right-handed father and a left-handed mother. He had seven brothers and six sisters, all of whom were left-handed. In the family of the mother, the father, two girls and three boys were left-handed; in the family of the father, one brother was left-handed, and he had five children, all of whom were left-handed. In this family, therefore, there were twenty-five left-handed individuals, and had it lived in neolithic times and assumed the vocation of flint-chipping the remarkable results obtained by Mortillet and to which we have referred could easily have been explained. Sir Daniel Wilson also gives several instances of the hereditary transmission of left-handedness.

In our endeavours to arrive at some information as to the period in the evolution of man at which right-handedness became a fixed and permanent human characteristic, the study of the child during the early months of its infancy is of very especial value. It is a matter for regret, therefore, that this ready means of investigation has not been more fully taken advantage of. Still we have the results obtained by Professor J. Mark Baldwin from a prolonged series of observations carried out on his own child, and these are most suggestive.² From the sixth to the tenth month the tendency to use both hands together was double the tendency to use one or other by itself, and so long as there was no violent muscular exertion there was no preference exhibited for the use of either arm. In the seventh and eighth months a distinct preference for the use of the right arm appeared in connection with all violent efforts, and "right-handedness had accordingly developed under the pressure of muscular effort" before the child could stand, creep or utter articulate sounds with any distinctness. In the thirteenth month the child was "a confirmed right-hander."

These experiments are interesting from another point of view. In the early months of infancy the motor paths in the brain and the spinal cord have not attained their full functional capabilities. The paths are laid down, but the fibres

took readings with a squeeze dynamometer from both hands of thirty men and boys, taking as many readings with either hand as I could obtain without indications of fatigue or of loss of interest—generally six or seven with either hand—either hand being used alternately to obviate differences due to practice or fatigue. Of these thirty cases twenty-four made a stronger average squeeze with the right hand—the superiority of the right hand varying from three to thirty per cent. and the average superiority being eight per cent. Of the others, four gave almost equal average squeezes with the two hands and one only gave stronger with the left—this about ten per cent. stronger." He further adds: "I think the difference in manipulative dexterity between the two hands and also the preference for the use of the right hand was less marked than in ourselves; although this is no doubt due merely to the fact that they do very little work requiring any great degree of manual dexterity."

¹ *Les courbures latérales normales du rachis humain*, par le Docteur Aimé Péré. Toulouse, 1900, p. 71.

² "Origin of Right or Left-Handedness," *Science*, vol. xvi, Oct. 31st, 1890, p. 242.

which compose them have not at the time of birth become enveloped in the medullary sheaths which are so essential to the proper carrying out of their work as lines of transmission. Until this is effected and the paths are practised by continuous effort, impulses originating in the brain cannot flow with any degree of freedom to the lower motor centres in the spinal cord from which the nerves which supply the muscles of the limbs proceed. At first therefore muscular efforts in an infant are more or less purely automatic, and it is not to be expected that a characteristic such as right-handedness would become manifest until the paths which connect the higher and lower motor centres are fully established and have been systematically practised.

Right-handedness is an inherited quality in the same sense that the potential power of articulate speech in man and of song in the bird are inherited possessions. Every normal child is provided with the complicated brain and nerve mechanism which is required for the successful acquisition of speech, and yet unless these nerve-centres and nerve-paths are brought into play and practised by the education which every generation gives to the succeeding generation, no outward manifestation of this potential power results.¹

The song of a bird appears to be established on a precisely similar footing. A most interesting and suggestive memoir was written on this subject by the Hon. Daines Barrington as long ago as 1773 and published in the *Philosophical Transactions* of that year.² It would appear that birds, although endowed with the potential capacity for the production of song, have absolutely no innate ideas of the notes peculiar to their species, and when young they acquire the power by paying attention to the parental notes and to them alone. Further, when once learned the song becomes fixed and no admixture with other birds will in any degree change it. Mr. Barrington educated nestling linnets under different varieties of lark, and in each case the linnet learned the song of its instructor. It is even asserted that a sparrow will pick up the song of a nightingale or a goldfinch, although in nature when educated by its parents its vocal power will never attain a higher flight than a chirp. These illustrations show how marvellously the nerve and muscle mechanism of certain hereditary powers is arranged and how even in the most distinctive functions of a species education and practice are necessary for calling these functions into play. The same law holds good, although in a minor degree, in connection with right-handedness, and thus it comes about that there have always been some observers who have maintained

¹ It is true that curious cases are recorded in which, after much delay, the speech apparatus has suddenly and, as it were, by a jerk commenced its function and apparently without the previous laborious practice which is required under ordinary circumstances. We are told that the son of Croesus was a youth before he began to speak, and the power came to him in a moment of excitement. Seeing a soldier rushing at his father with a drawn sword he called out: "Do not kill Croesus," and spoke fluently from that time on. Similar cases are recorded in the present day (see Bastian, *Aphasia and other speech defects*. H. K. Lewis, London, 1898, p. 8), but they do not affect the truth of what is stated in the text.

² p. 252.

that because a child does not show the character in a strong degree from the first, and because some are more slow in exhibiting it than others, it is consequently a quality acquired during life and is largely, if not entirely, the result of education and training. One example of this line of argument will suffice. Sir Thomas Browne¹ held that dextral pre-eminence has "no regular or certain root in nature"; that it does not exist in children, and that in adults it is the result of institution and not of nature because "it is most reasonable for uniformity and sundry respective uses that man should apply himself to the constant use of one" arm. Buchanan² shrewdly remarks in reply to this contention, "If the use of the right hand were a mere conventional arrangement founded on utility and expediency, and inculcated by precept and practice on a docile and obedient posterity, it would have varied like every other human institution left to voluntary control. Love of change, fancied utility, the spirit of opposition and mere caprice would, in every age of the world, have rendered the use of the one hand as common as the use of the other. If the barbarians who tattoo their faces, compress their skulls, distort their feet, and otherwise mutilate and disfigure the human frame are, nevertheless, all of them, just as unanimous as civilized nations in the preference of the right hand over the left, we may rest assured that it is not a mere matter of choice on their part, which hand they ought to prefer."

We shall now endeavour to ascertain the conditions which have led to the right hand having been advanced by the selective force of evolution to the place of pre-eminence. That the two sides of the body are in many respects asymmetrical is a matter of common knowledge. It is not surprising, therefore, that in the various theories which have been put forward to account for right-handedness, sometimes one and sometimes another of these asymmetrical bodily arrangements has been held forth as affording the clue to the solution of the problem. I have little inclination, even if I had the time, to discuss these different views, but there is one which deserves more than a passing notice. This theory, from the way in which it was advanced, forty years ago, was soon shown to be quite untenable, yet it appears to me to contain within itself the elements from which a reasonable explanation can be offered.

In 1862, Buchanan³ pointed out that the right side of the body, in so far as the action of the right upper limb is concerned, possesses certain mechanical advantages over the left side. The right lung is more bulky than the left lung in the proportion of eleven to ten, and consequently when a deep breath is taken a more stable basis of support is given to the right upper limb. But more important than this is the manner in which the viscera are disposed within the abdominal cavity. The solid, massive liver occupies a very large part of the right

¹ *Vulgar Errors*, iv, 5, quoted from Dr. Ogle's article on "Dextral pre-eminence."

² "Mechanical Theory of the Predominance of the Right Hand over the Left; or more generally of the Limbs of the Right Side over those of the Left Side of the Body," *Proc. Phil. Soc. of Glasgow*, vol. v, 1862, p. 142.

³ *Proc. Phil. Soc. of Glasgow*, vol. v, 1862, p. 142.

half of the cavity, whilst the left half is chiefly filled by the hollow viscera, viz., the stomach and the intestines. In addition, therefore, to the right side of the abdomen affording the upper limb a more solid and compact support, the weight of the viscera on this side is more considerable than on the left side. The difference in the weight of the contents of the right and left halves of the abdominal cavity is not difficult to prove. Professor Struthers¹ states that it amounts to 15 ounces or more, and probably this is not far from the truth, although at the time when the investigation was made the methods at his disposal were not calculated to yield absolutely accurate results.² The centre of gravity of the body lies therefore a little to the right of the mesial plane, and in consequence of this, and also from the more compact nature of the viscera on the right side, the right upper limb in its operations has a mechanical advantage over the left limb. Buchanan held that right-handedness was not a congenital attribute of man transmitted from parent to offspring, but that it appeared as an acquired character during life, and as the result of the superior mechanical conditions of the limb. His faith in his own theory was so implicit that he maintained that individuals with transposition of the viscera must necessarily be left-handed, although he did not explain how an individual may be left-handed in whom the viscera are normally disposed.³ Buchanan's theory was not long allowed to go unchallenged. In the course of a few years it received its death-blow when it was shown by Dr. Pye-Smith⁴ and others that transposition of the viscera might occur without any disturbance of dextral pre-eminence. According to Aimé Péré,⁵ somewhere about two hundred cases of transposed viscera have been recorded, and this author gives particulars of a very large number of these. In this list I find that in twenty-eight in which the condition is mentioned twenty-three were right-handed and five were left-handed. This is a large proportion of the latter, and clearly indicates that the same obscure influence which tends to

¹ *Edin. Med. Journ.*, June, 1863.

² My assistant, Dr. T. G. Moorhead, has recently made some interesting observations on the relative weights of the right and left sides of the body in the human foetus. He states the general results which he has obtained thus: "From the fifth month of fetal life onwards the centre of gravity of the body is placed to the right side of the mesial plane, the thoracic and abdominal viscera on this side representing 52·6 per cent. of the total weight of the viscera, as compared with 47·4 per cent. on the left side. The child therefore enters upon its extra-uterine existence with a marked right-sided bias." (*Journ. of Anat. and Physiology*, July, 1902.)

³ Since the seventeenth century it has been known that occasionally individuals are born in whom there is complete or partial transposition of the viscera, or in other words in whom the viscera which naturally lie on the right side are transposed to the left side and *vice versa*. The earlier cases of this remarkable condition excited much interest and gave rise to considerable discussion, from which several curious theories characteristic of the period took shape. Molière was aware that such a transposition was possible, although with the contempt which he always showed towards medical men he turned the matter into ridicule. It is interesting to note in passing that the well-worn expression "*nous avons changé tout cela*," which occurs in his play, *Médecin Malgré Lui*, owes its origin to this.

⁴ *Guy's Hospital Reports*, 1871.

⁵ *Les Courbures Latérales Normales du Rachis Humain*. Toulouse, 1900.

produce transposition of the viscera likewise exercises some effect in the production of the conditions which lead to left-handedness.

Buchanan fell into serious error in the way in which he enunciated his theory, but, for all that, it contains much that is true, and with some slight modification it may be placed on a much more secure and permanent basis. Let us once and for all cease to claim that right-handedness is a character which is acquired during the life of the individual and perishes with him only to be picked up again by the offspring through certain peculiarities in his bodily conformation. Right-handedness is a character which has been attained in the ordinary course of the evolution of man by the subtle process of natural selection. A variation which tended to place and retain this attribute of man on the most favourable side is one which would be strengthened and fostered until in the end it would become a permanent possession of man—a possession which would not even be disturbed by the transference of the bodily conditions, which originally led to its acquisition, to the other side of the body. Against this view it may be argued that it removes the difficulty only one step back, and that it is still necessary to point out the conditions which are thus transmitted from one individual to another, and by which right-handedness is perpetuated and prevented from oscillating from one side to the other when the position of the viscera is reversed. These conditions do not reside in the right upper limb itself nor in the vessel which conveys blood to it. Although the matter has not been investigated so fully as to place the question outside the region of dispute, the evidence at our disposal distinctly favours the view that at birth the two upper limbs start upon their individual duties equally endowed in so far as strength of muscle and size of bones are concerned.¹ Both in mass and weight the two limbs are to all intents and purposes similar at birth, and the preponderance in bulk and strength which later on distinguishes

¹ An interesting and complete *résumé* of the literature bearing on this point is given by Gustav A. Guldberg (*Études sur la Dysynétrie Morphologique et Fonctionnelle chez l'Homme et les Vértébrés Supérieurs*. Christiania, 1897). The results obtained by Harting, Arnold, Rollet, Gaupp and Theile are given and discussed. There is no definite agreement between these observers, and taking into consideration the difficulties attending the investigation and the unavoidable errors to which it is open, I consider that I am justified in expressing the above opinion.

Biervliet ("l'Homme droit et l'Homme gauche," *Revue Philosophique de la France et de l'Étranger*, tome xlii, 1899) also enters fully into this question and concludes, "chez les enfans, même très jeunes, l'asymétrie des membres supérieurs existe selon toute probabilité; mais elle est très peu accentuée."

In a note, published in the *Comptes Rendus Hebdomadaires des Séances et Mémoires de la Société de Biologie*, Paris, Jan., 1887, Debière holds that in the development of the upper limbs the right originally exceeds the left, so that man is a "droitier" or a "gaucher" at birth.

Moorhead ("The Relative Weights of the Right and Left Sides of the Body in the Fœtus," *Journ. of Anat. and Physiol.*, July, 1902) is the most recent writer on this subject, and his results fully bear out the statement which I make in regard to the condition of the two upper limbs at birth.

the right arm is acquired during life and is caused by the greater amount of work it is called upon to perform.

All the evidence at our disposal goes to show that right-handedness is due to a transmitted functional pre-eminence of the left brain, and that this is the factor which prevents an oscillation of the condition from one side to the other when the viscera are reversed. But before we take up this question of left-brainedness¹ there are certain matters arising out of what goes before which require to be dealt with. The most important of these is the question: Is right-handedness a special and peculiar attribute of man, or is it a character which he shares with monkeys and other animals? In the ape, especially in the anthropoid members of the group, the viscera are disposed in a manner very similar to that characteristic of man. In the ape the centre of gravity also lies to the right of the mesial plane, and seeing that the hand is not entirely devoted to locomotion, but is endowed with many of the capabilities which distinguish the human hand, it would not be unreasonable to expect a certain amount of preference developed for the use of the right upper limb. Opinion is divided upon this point. Dr. Ogle,² who wrote, in 1871, an interesting and instructive paper on "Dextral Pre-eminence," was fully convinced that monkeys are as a rule right-handed. He states that in twenty-three monkeys he found twenty right-handed and three left-handed. More recently, at the last meeting of the Physiological Congress in Turin (1901), K. Osawa³ of Tokyo, urged the opinion that monkeys are either right-handed or ambidextrous—only a very few being left-handed. Martin,⁴ Dwight,⁵ Seeligmüller,⁶ Langkavel,⁷ and others, are all more or less committed to the same view. I wish I could range myself alongside these authorities, because by so doing I could smooth over certain difficulties in my mind in regard to the question at issue; but for many years I have had an intimate experience of both the higher and lower apes in the Gardens of the Royal Zoological Society of Ireland, and I have never been able to satisfy myself that they show any decided preference for the use of one arm more than the other. Hollis⁸ and Brinton⁹ entertain similar views on this matter.⁹ If I am

¹ So far as I know the term "Linkshirigkeit" was first employed by Drozda (*Linkshirigkeit der meisten Menschen*, von Dr. Josef v. Drozda, Wiener Medizinische Presse, xxi, 1880, p. 1206). Broca makes use of the expression "Gauchers du Cerveau" ("Du Siège de la faculté du langage articulé," *Bull. de la Soc. d'Anthrop.*, 1865, t. vi, p. 377-390).

² *Med. Chirurg. Trans.*, vol. xxxvi, p. 279.

³ *Ueber Linkshändigkeit*. (From abstract obtained at the Congress.)

⁴ *Bull. Soc. Anat.*, 1890, p. 42.

⁵ *Scribner's Magazine*, vol. ix.

⁶ *Deutsche Revue*, 27 Jahrgang, April, 1902, p. 51.

⁷ *Journ. Anat. and Phys.*, 1874, vol. ix, p. 263.

⁸ *The American Anthropologist*, vol. ix, p. 175, May, 1896.

⁹ I may mention that recently a male chimpanzee, about six years old, having died in the Dublin Zoological Gardens, I had the bones of the two upper limbs carefully prepared. They were then weighed and it was found that the bones of the two sides were as nearly as possible equal in weight: what slight difference there was, was in favour of the bones of the left upper limb.

correct in my observations on the monkey, if the ape is truly ambidextrous, it is reasonable to conclude that in the evolution of man right-handedness did not assert itself until the upper limb had been set absolutely free from the office of locomotion, and had assumed the higher duties which are now assigned to it. I have already expressed the belief that no sooner did man assume an upright gait than this character began to be developed—feebly marked in the earlier stages, no doubt, but gradually gathering strength as the connection between the hand and the brain became more and more intimate, and as the work allotted to the hand grew in importance. It thus comes about that it is in civilized races engaged in skilled labour of the highest order that the highest degree of right-handedness is exhibited,¹ and it becomes a question whether the introduction of mechanical contrivances which are nowadays so fast replacing manual work—the typewriter and the printing machine, the steam-loom and the reaping machine,—may not in the course of time operate to some degree in the opposite direction.

Valuable evidence in regard to certain points in the evolution of man is to be obtained from the study of the microcephalic idiot. Those microcephales which are free from apparent pathological taint, and which fall within a class which may be appropriately called "morphological," frequently present in the brain and cranium certain remarkable atavistic characters, which would seem to have been distinctive of an early stem-form of man.² Unfortunately we have not much detailed information concerning the idiot which bears directly on the question at issue; still the evidence which is available is extremely interesting, and points to the conclusion that while left-handedness is not more common in the morphological microcephale than in the normal individual, there is a much higher percentage of those who are ambidextrous, and consequently a great reduction in the percentage of those who are right-handed. This was the result obtained by Dr. W. Ireland³ from an examination of the imbecile children in the Larbert Institution. These statistics, while important, lose a certain amount of their value through no attempt having been made to classify the cases observed according to the particular form of idiocy exhibited by each. I am indebted to Dr. F. R. P. Taylor for some striking details regarding eighteen microcephalic idiots at present in the Institution,⁴ of which he is the medical superintendent. Ten of these fall within the morphological group, and of these five are right-handed, one left-handed, whilst four are ambidextrous.⁵ Of course I fully appreciate the fact that the statistics at our disposal on this subject are not sufficient to justify us in arriving at any far-reaching conclusions, but all the same I am inclined to consider

¹ See reference to the observations of Dr. W. McDougall on the Murray Islanders, p. 279.

² "The Brain and Cranium of the Microcephalic Idiot," by D. J. Cunningham and Telford Smith, *Scientific Transactions, Roy. Dub. Soc.*, vol. v (series ii), 1895.

³ "Notes on Left-Handedness," *Brain*, vol. iii, p. 207, 1880-81.

⁴ Darenth Asylum, Dartford, Kent.

⁵ See table in the Appendix.

that there is exhibited in the microcephalic idiot a distinct atavistic tendency to revert to the ambidextrous condition of the early progenitors of man.

The motor paths which take origin in the cortex of the two cerebral hemispheres cross to opposite sides of the body as they proceed to their ultimate destinations. It thus comes about that the left cerebral hemisphere controls and regulates the muscles of the right side, and its functional superiority over the right hemisphere is indicated by the subservient position which the left hand holds with reference to the right, and the manner in which all manual acts which require precision and skill, all the movements which specially require the higher guidance of the brain, are performed by the right hand. But it is not only in this respect that the left cerebral hemisphere stands out pre-eminent. The active speech centre is located in the left brain. We speak from the left cerebral hemisphere, and there are probably no series of motor acts which require a greater refinement of adjustment than those which result in articulate speech. It is indeed remarkable that it should have fallen to the lot of the one cerebral hemisphere to preside over the movements accompanying speech in the same way as it presides over the movements of the skilful right hand. From what I have said it must not be inferred that there is no speech centre on the right side of the brain, but merely that the greater part, if not the whole, of the motor incitations which lead to articulate speech go out from the speech centre which resides in the left cerebral hemisphere. A still fuller significance is given to this arrangement by the fact that in left-handed people the predominance of the right cerebral hemisphere is still further accentuated by the transference to it of the active speech-centre. Left-handed people therefore speak from the right brain. From this it is evident then that left-brainedness and right-handedness constitute the normal condition; whilst right-brainedness and left-handedness are to be regarded as an exceptional occurrence.

The functional pre-eminence of the left brain is not a hap-hazard acquisition which has been picked up during the life of the individual. It is not the result, but, through evolution, it has become the cause, of right-handedness. As already explained, the most favourably placed limb has been raised by natural selection to the position of special importance, but this increase of power has not been conferred upon it by the perpetuation of any variation in the limb itself, but of a variation in the cerebral hemisphere which presides over its operations. There cannot be a doubt that the superiority of the left cerebral hemisphere rests upon some structural foundation which is transmitted from parent to offspring; and further that the exceptional cases of right-brainedness and left-handedness which we every now and then observe, are due to the transference of this structural peculiarity from the left to the right side, or more probably to a transposition of the two cerebral hemispheres in the same way that transposition, either partial or complete, of the thoracic and abdominal viscera occurs. It is evident, however, that transference of the two cerebral hemispheres may take place without any corresponding disturbance of the viscera; but that there is a

distinct tendency for the condition to occur along with transposition of the thoracic and abdominal viscera, is seen by the fact that there is a large proportion of left-handed individuals amongst those who present this remarkable visceral displacement.

The quest for the structural conditions upon which the functional superiority of the left cerebral hemisphere depends, is surrounded with great difficulty. Much speculation has been indulged in, in connection with this problem, and its solution has been attempted by the enunciation of many ill-considered theories. One very favourite hypothesis is that left-brainedness is the result of the left cerebral

hemisphere being placed more advantageously than the right hemisphere in regard to its blood-supply. According to those who hold this view, the left hemisphere not only receives its blood-stream under more favourable physical conditions, but it likewise obtains a more generous supply, while the outflow is not so free.

The two leading advocates of this theory are Armand de Fleury¹ and Dr. Ogle,² whilst more recently Dr. Fritz Lueddeckens³ has argued with some skill in favour of it. Time will not allow me to combat this plausible, but fallacious explanation; nor indeed is it necessary that I should do so, seeing that I dealt to some extent with the question in an address which I had the honour to deliver before the Anthropological Section of the British Association in Glasgow in 1901.⁴

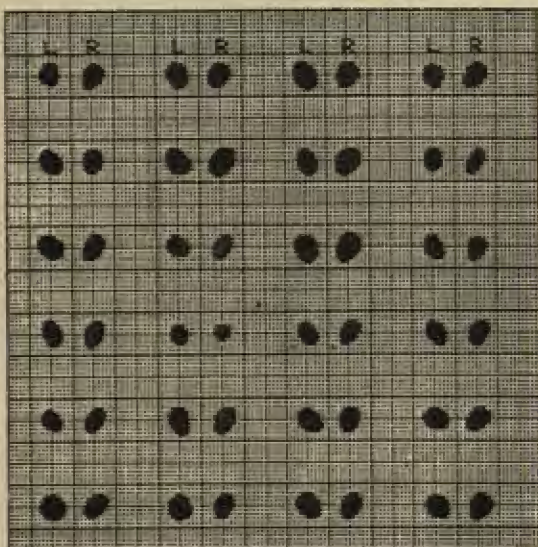


FIG. 5.—In this diagram the sectional area of the carotid canal through which the internal carotid artery, the principal vessel of supply to the brain, enters the cranium is given for the two sides in twenty-four skulls taken at random. A mould of the canal was taken in dentist's wax; this was cut across transversely and the cut surface, covered with printer's ink, pressed on millimetric paper. The size of the chief arterial channel conveying blood to the brain is thus accurately obtained for each side and can be easily measured. The result shows that considerable differences in this respect are to be found in different skulls. These discrepancies, however, are sometimes in favour of the one side and at other times in favour of the other side; and when the combined sectional area for all the skulls examined (omitting one which was abnormal) was calculated, it was, curiously enough, found to be 553½ sq. mm. for the left side and 553 sq. mm. for the right side.

It has been further asserted that the left cerebral hemisphere is heavier and bulkier than the right, and that this contributes not a little to give it its functional

¹ "Sur la pathogénie du langage articulé." Couronné le 9 Février, 1865, par l'Acad. des sciences belles lettres et arts de Bordeaux.

² "Dextral pre-eminence." *Med. Chir. Trans.*, 1871.

³ *Rechts und Linkshändigkeit.* Leipzig, 1900.

⁴ Broca discusses this view at some length, and, although evidently biased in its favour, comes to the conclusion that the mode of origin of the two carotids exercises a certain influence upon the division of labour undertaken by the two hemispheres, but not a "décisive" influence. ("De la différence fonctionnelle des deux hémisphères cérébraux." *Bull. de l'Acad. Med.*, 1877, p. 508.

superiority. Boyd,¹ who made 200 observations, came to the conclusion that "almost invariably the weight of the left cerebral hemisphere exceeded that of the right by at least the eighth of an ounce," whilst Broca² considered that the left frontal lobe was on an average 2.50 grammes heavier than the right. An accurate determination of the relative weights of the two cerebral hemispheres is no easy matter, as many factors may contribute to vitiate the result, and there is every reason to believe that the predominant weight ascribed to the left cerebral hemisphere by these authorities is due to errors of observation. Braune³ has shown in the most conclusive manner that if there is any difference in weight between the two hemispheres, it is a difference in favour of the right, and not of the left,⁴ and I may add that these results are quite in accord with my own observations, and that I believe that the same conditions as to weight are present at all periods of growth and development. We may dismiss, therefore, from our minds the possibility of left-brainedness being due to a greater mass of cerebral substance on the left side of the brain.

It has also been claimed that the superiority of the left cerebral hemisphere is to be found in the greater richness and complexity of its convolutions, and it has even been asserted that in the few cases where the brains of left-handed individuals have been studied this character has been observed to be transferred to the opposite side.⁵ That there is a marked asymmetry in the arrangement of the convolutions of the two cerebral hemispheres of man is a well-known fact. The same asymmetry is also noticeable in the lower animals, although it never attains the same degree as in man, and in this connection it is interesting to note that Broca considers, on somewhat meagre evidence perhaps, that domestication appears to accentuate the want of symmetry in the arrangement of the convolutions in the brains of lower mammals. Be this as it may, in so far as man is considered I am satisfied that no amount of ingenuity would enable us to twist the asymmetrical arrangement of the convolutions into such a form as to give a constant and general superiority to one hemisphere over the other.

But the convolutionary plea has been presented under another guise. Gratiolet⁶ expressed the view that in the development of the brain the convolutions of the left frontal lobe assume form at an earlier date than those

¹ *Phil. Trans.*, vol. cli, p. 241, London, 1862.

² "Sur le poids relatifs du deux hémisphères cérébraux et de leur lobes frontaux," *Bull. de la Soc. d'Anthropologie*, 2e série, 1875, t. x, p. 534.

³ "Das Gewichtsverhältniss der rechten zur linken Hirnhälfte beim Menschen," *Archiv. für Anat.*

⁴ Braune weighed the cerebral hemispheres of 92 brains and found that in 52 the right hemisphere was the heavier; in 34 the left was the heavier; and in one case only were they of equal weight. The sum of the total excess weight on the right side amounted to 273.4 grammes, whilst that on the left side came to 129 grammes.

⁵ Ogle, "Dextral pre-eminence," *Med. Chir. Trans.*, 1871.

⁶ *Anatomie comparée du Système nerveux*. Paris, 1839, t. ii, p. 241.

on the right side, and Ogle, Broca,¹ and others have thrust this statement forwards as one of considerable importance in connection with the question under consideration. Gratiolet, however, did not express himself with any degree of confidence on this point, and Ecker² has shown that there is in reality no general disagreement between the two hemispheres as to the time at which the convolutions appear—a conclusion with which I fully concur.

The physiologist has laid it down as a law that as we ascend the mammalian scale the motor area of the cerebral cortex becomes more and more distinctly differentiated into definite districts, each of which stands in connection with particular groups of muscles or with the movements produced by these muscles. It is still further believed that the extent of the area of cerebral cortex which is allotted to each muscle-group is not determined by the bulk or mass of muscle which belongs to that group, but by the refinement of the movements which it is called upon to undertake. Thus the arm-area of cortex appears of enormous extent when compared with the area which presides over the more bulky muscles of the trunk, and this principle appears in the main to underlie the partition of the entire motor area of the cortex into districts representing the various voluntary movements. Such being the case, it becomes apparent that in pursuance of our inquiry the area of cerebral cortex on each side of the brain which controls and

regulates the voluntary movements of the arm must be subjected to the closest scrutiny. By recent experimental work on the anthropoid ape the arm-area has been determined with very great care and precision, and by observers in whom we may place implicit trust.³ It is situated in the back part of the frontal lobe immediately in front of the central fissure, or in

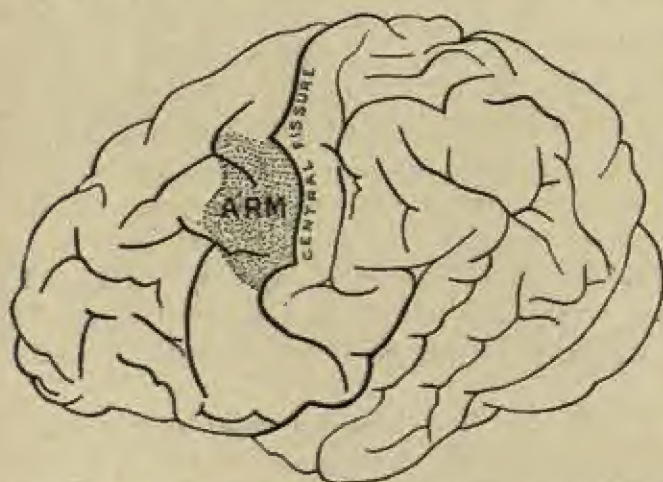


FIG. 6.—Tracing from the figure accompanying the paper by Grünbaum and Sherrington, showing the precise extent of the arm-area in the cerebral cortex of the anthropoid ape as determined by these observers by direct experiment.

other words that fissure which forms the arbitrary hinder boundary of the frontal district of the cortex. The study of this portion of cortex can only be satisfactorily pursued by tracing the growth changes which it undergoes during the development

¹ "Du Siège de la Faculté du langage articulé," *Bull. de la Soc. d'Anthropologie de Paris*, 1865, t. vii, p. 377.

² *Archiv. für Anthropologie*, 1868, bd. cxi.

³ "Observations on the Physiology of the Cerebral Cortex of some of the Higher Apes." (Preliminary communication.) By A. S. F. Grünbaum, M.D., and C. S. Sherrington, F.R.S. *Proc. Roy. Soc.*, vol. lxxix, no. 453, p. 206, December, 1901.

and extension of the cerebral surface. In the latter half of the sixth month of foetal development, when the early convolutions are beginning to assume form, a conspicuous rounded elevation grows up from the surface and forms a marked bulging in this region (Plate XXI, Figs. 1 and 2, *a*). The cortical elevations which appear at this period are unquestionably connected with the development of function in localized areas, and if read aright they would, I am satisfied, in many cases afford information as to the evolution of function in the cortex. Interpreted in the light of the recent brilliant experimental work by Grünbaum and Sherrington on the localization of the motor centres, there is every reason to believe that the eminence in question represents the early condition of the arm-centre. It occupies the precise position which they have mapped out, and its exuberant growth as compared with that of the surrounding cortex clearly indicates that it is an area which will, in the course of time, become the seat of functional activity of an important kind. Immediately behind this elevation, but on the other side of the central fissure, another eminence of a somewhat similar appearance grows up much about the same time in the parietal lobe (Plate XXI, Figs. 1 and 2). The presumption is that this elevated area of cortex is also connected in some way with the activity displayed by the arm, but Grünbaum and Sherrington have shown that it cannot be regarded as being a part of its motor centre. Possibly it may be the receptive centre to which sensory impressions travelling from the upper limb are conveyed, but this is a purely speculative view and is at present supported, so far as I am aware, by no solid basis of fact beyond this, that many corticopetal fibres (fillet system), travelling up from below, end within the area.¹

The further development of these two eminences can be traced with the greatest precision through all the successive stages of cortical growth, until finally the adult condition is attained (Plates XXI and XXII, Figs. 1 to 8). It is this region, therefore, of the cerebral surface upon which our attention must be fixed in our endeavour to arrive at some explanation of the functional superiority of the left brain as manifested in the greater manipulative dexterity of the right upper limb, and if the physiological axiom be correct that an increase in the skill and refinement of certain movements is accompanied by an extension of the cortical area, which stands in connection with the muscles producing these movements, we should enter upon the investigation with some anticipation of success.

¹ Previous to the researches of Grünbaum and Sherrington the portion of cortex which corresponds to this eminence in the adult brain was considered to form part of the motor centre for the arm, and it is both interesting and suggestive to note that in cases of congenital absence of the arm the portion of cortex which corresponds to the front eminence (Sherrington's motor area for the arm) remains absolutely unaffected, whilst the portion of cortex which corresponds to the hinder eminence (the receptive centre for the arm (?)) exhibits a certain amount of reduction. For an account of such a case, see article by Dr. Moorhead in the October number of the *Journal of Anatomy and Physiology* (1902). In this paper the details of two other cases, published by Sir William Gowers, and by Sir Victor Horsley and Dr. Bastian, are given.

On both sides the growth of the district under observation, during the process of development, is much in excess of that noticed in the surrounding cortex, and very soon by the backward extension of the area represented by the anterior eminence, which as we have noted corresponds to the motor centre of the arm, the central fissure is doubled back in this part of its course, and the two bends or genua which are so characteristic of this furrow are produced. A bay is thus formed in the central fissure within which the growing arm-area accommodates itself (Plates XXI and XXII, Figs. 3 to 8). Grünbaum and Sherrington call attention to the importance of these genua as affording landmarks by which the upper and lower limits of the arm-centre can be indicated.

The same bending of the central fissure, produced apparently in the same way, is seen in the gorilla, chimpanzee (Plate XXII, Figs. 10 and 11), and orang, and in these it is often as well marked as in man; in the gibbon and in many of the lower apes it is also present, but in a feebly expressed condition (Plate XXII, Fig. 9); in the remainder of the lower apes the furrow is straight. It must not

for a moment be supposed that I desire to argue from this that the manipulative power of an ape can be gauged by the depth of the bay in the central fissure which is formed for the reception of the arm-centre; indeed I believe that other factors enter into the determination of the amount of inflexion present in the furrow besides the growth of this special cortical area. The question is one which is well worthy of further study.

When the process of cortical growth is complete a comparison of the human brain with that of the three higher anthropoids shows that in so far as the cortex exposed on the surface is concerned there is little difference in the relative extent of the arm area.¹ But when the central fissure is opened up the preeminence of man stands forth unchallenged.

In the lower apes and in the gibbon the walls



FIG. 7.—The central fissure of the human cerebrum opened up to show the submerged interlocking gyri.

a. Submerged interlocking gyri.
e and d. The genua of the central fissure.

of the fissure are quite smooth; in the higher anthropoids there is a slight tendency to a wrinkling and interlocking of the opposing banks of the fissure in the region of the arm-centre; in man a large amount of cortex belonging to the arm-centre is stowed away within the central fissure in the shape of submerged interlocking gyri. The importance of this is easily appreciated when we bear in mind that Grünbaum and Sherrington have shown that stimulation of the anterior wall

¹ If there is any difference it is one in favour of the anthropoid, and one is almost tempted to suggest that this may have some connection with the great length of the arms of these apes, although such an explanation would run counter to physiological teaching.

of the central fissure in the anthropoid in this region produces an immediate motor response on the part of the arm.

By direct experiment it has been demonstrated that the majority of the furrows on the cerebral surface in this neighbourhood cannot be regarded as affording functional boundaries. The study of the developing brain leads to a somewhat similar conclusion. A considerable number of the furrows are produced by the process of convolutionary packing to which the brain is subjected in the later weeks of intrauterine life. It is necessary to mention this to avoid misconception. The early arm-area is not delimited by furrows. It is simply a surface upheaval, and its subsequent development, although sometimes obscured by the introduction of furrows, can as a rule be traced with precision.

From this preliminary study of the cortical district which corresponds to the motor centre of the arm we can now proceed to institute a comparison of the area on the two sides of the brain. When I began this investigation I was not without hope that in the developing brain, at least, I would be able to discover something which would give us a clue to the functional superiority of this part of the cerebral cortex on the left side. So far as the inquiry has had any result at all, the conclusions I have arrived at are exactly the opposite of what I had anticipated. There is, I believe, a slight difference, and one that is fairly constant on the two sides of the brain, but this is a difference which at all stages, except during the eighth month of foetal life¹ (Plate XXI, Figs. 4 and 5), is almost invariably in favour of the right cerebral hemisphere. Further, this greater exuberance of the cortical area allotted to the arm in the right brain appears to be distinctive of the ape as well as of man, although the difference cannot be said to be so marked.

When we turn from the special field of cortex allotted to the arm and examine the whole extent of the region of cerebral surface, of which it forms a part, it becomes evident that the latter is more extensive on the left side. The region to which I refer is bounded below by the great Sylvian fissure, and it is not difficult to prove that this fissure is more depressed in the left brain than it is in the right (Plate XXII, Fig. 12). That this is in any way associated with right-handedness, or with the localization of the active speech centre in the left cerebral hemisphere, I am not prepared to urge, because the same condition is also a characteristic of the ape. This it is true would offer no impediment to the acceptance of this explanation by those who believe that the ape is right-handed, but, as I have already stated, I cannot persuade myself that the ape possesses any superior power in either arm.

That I should have so far been baffled in the attempt to discover some structural character to account for the functional superiority of the left cerebrum does not lessen my belief that such exists. It merely persuades me that the inquiry has been conducted up to the present along wrong lines, and I do not doubt that the problem will ultimately be satisfactorily explained. On a previous

¹ Why it should so happen that at the eighth month of development, and only at this period, the area in question should show an excess of growth on the left side I cannot explain. This condition is very evident in four out of the five brains belonging to this period which I possess.

occasion¹ I had an opportunity of expressing my belief that no constant or definite difference can be detected in the area of cortex associated with the speech centre on the two sides of the brain, and yet it would appear that only the left speech centre is active. The results, therefore, which have been derived from our examination of the arm-area of cortex on the two sides are of a precisely analogous nature.

I have already hinted that by the study of the early conditions of the cerebral cortex in man, information may be obtained regarding the evolution of function. To arrive at any definite result in this direction it is necessary that the development of the cerebral cortex of the ape be also studied. Up to the present this is an almost unexplored field, and I know of no branch of morphological investigation which would be likely to afford so rich a result. We have seen that the bulging of the arm-area in the human cerebrum occurs very early—somewhere about the middle or end of the sixth month. The portion of cortex devoted to speech assumes shape much later. Indeed it does not appear until shortly before birth, and is not fully developed until the end of the first year of infancy. This might be considered to give some basis of support to Dr. Monro's plea² that man attained the erect attitude, and that the arm was set free for the development of its higher functions before articulate speech was elaborated. To assign the proper weight to this argument, however, it would be necessary to ascertain how the arm-centre develops in the ape.

I am fully sensible of the fact that the subject which I have discussed is in a measure merely a part of the much larger question of right and left-sidedness, or of "*l'homme droit et l'homme gauche*" as it has been put by Biervliet. It is held by some that the first segmentation of the ovum determines the mesial plane of the body and that the two portions of yolk which result from the cleavage form, by their subsequent development, the right and left halves of the individual respectively. Be this as it may, it is not alone in the possession of the awkward hand that the left side shows inferiority. It would seem that in some respects it exhibits a less vigorous growth and that in certain localities it is more prone to congenital defects than the right side. Defects of the upper lip occur twice as frequently on the left side as they do on the right side³; the teeth—both temporary and permanent—of the right side are said to be more voluminous and denser than those of the left side⁴; whilst Harrison Allen⁵ maintains that the dental arch is as a rule deflected on the left side. The question also as to

¹ Address to Anthropological Section of the British Association. Glasgow, 1901.

² Address to Anthropological Section of the British Association. Nottingham, 1893.

³ Th. Kölliker. Ueber das os intermaxillare des Menschen. *Nova acta der Kgl. Leop.-Carol. Deutschen Akad. der Naturforscher*, bd. xliii, no. 5, 1892. Kölliker states that of 165 cases, 113 occurred on the left side, and only 52 on the right side.

⁴ V. Gallippe.—"La Droiterie et la Gaucherie, sont-elles fonctions de l'éducation ou de l'hérédité?" *Comptes Rendus Hebdomadaires des Séances et Mémoires de la Société de Biologie*. Paris, 1887.

⁵ *Proc. Acad. Nat. Sci.*, Philadelphia, 1888. Harrison Allen states that "out of 96 examples of dental arches, 58 were found to be deflected more on the left than on the right; 21 deflected more on the right than the left; while 17 only were symmetrical."

which of the two lower limbs is the stronger and more useful has been much debated; but in the limited time at my disposal I have thought it better to strictly confine my remarks to that branch of the subject which concerns the upper limb.

APPENDIX.

PARTICULARS OF MICROCEPHALICS. Supplied by Dr. R. P. TAYLOR, Medical Superintendent, Darenth Asylum.

Age.	Circumference of Head.	Right or Left-handed or Ambidextrous.	Power of articulate speech.	Remarks.
9	16.75	Right-handed; finer movements, slight.	Nil... ..	Pathological.
24	17.25	Left-handed; finer movements, very slight.	Indistinct... ..	Pathological.
29	19	Ambidextrous	Indistinct... ..	Pathological.
28	20	Nil	Nil... ..	Pathological.
14	19.5	Left-handed; finer movements, nil.	Nil... ..	Pathological.
?	17.25	Nil	Nil... ..	Pathological.
34	19	Right-handed	Good	Pathological.
12	16.75	Left-handed; finer movements, very slight.	Good	Pathological.
33	19	Ambidextrous; finer movements, fair.	Bad	Morphological, rickety.
37	18.50	Ambidextrous; finer movements, good.	Bad	Morphological, deaf and dumb.
39	18	Left-handed; finer movements, nil.	Bad	Morphological.
21	16	Ambidextrous; finer movements, nil.	Bad	Morphological.
12	15	Ambidextrous; finer movements, nil.	Bad	Morphological.
28	17½	Right-handed; finer movements, good.	Indistinct... ..	Morphological, deaf.
16	17½	Right-handed; finer movements, good.	Bad	Morphological.
18	18½	Right-handed; finer movements, good.	Bad	Morphological.
?	17½	Right-handed; finer movements, good.	Fair	Morphological.
31	17½	Right-handed; finer movements, good.	Fair	Morphological.

Explanation of Plates XXI and XXII.

- Fig. 1. Right cerebral hemisphere from a human foetus in the latter half of the sixth month of development.
- Fig. 2. Right and left cerebral hemispheres from a human foetus of about the same period of development as the foetus from which Fig. 1 has been obtained.
- Fig. 3. Right and left cerebral hemispheres from a human foetus in the middle or latter part of the seventh month of development.
- Figs. 4 & 5. Right and left cerebral hemispheres from two human foetuses in the eighth month of development.
- Fig. 6. Right and left cerebral hemispheres of a human foetus in the early part of the ninth month of development.
- Fig. 7. Right and left cerebral hemispheres of a full-time human foetus.
- Fig. 8. Right and left cerebral hemispheres of an adult man.
- Fig. 9. Right and left cerebral hemispheres of a baboon.
- Figs. 10 & 11. Right and left cerebral hemispheres of two chimpanzees.
- Fig. 12. Method employed to determine the inclination of the Sylvian fissure.

Lettering common to all the Figures.

- a.* Elevation in early foetal brain which corresponds to the motor area for the arm.
- b.* Corresponding elevation behind the central fissure.
- c.* Superior genu of the central fissure.
- d.* Inferior genu of the central fissure.

The arm-area in each cerebrum is tinted *pink*.



1



2



3



4



5



6



d

d

e e
7



d

d

e e
8



d

d

e e
9



d

d

e e
10



d

d

e e

11



12

THE MEDICINE, SURGERY, AND MIDWIFERY OF THE SINAUGOLO.

BY C. G. SELIGMANN, M.B.

[WITH PLATE XXIII.]

WHILE with the Cambridge Anthropological Expedition to Torres Straits, the following notes—which do not claim to be complete—were collected from the Sinaugolo, an inland tribe inhabiting the Rigo District of British New Guinea. The coast in this part of the Possession is occupied by a people of Motu stock who have done little more than effect a lodgment. Immediately behind these are the Ikoro, a weak tribe occupying a narrow zone of country which extends only for two or three miles from the coast. Behind these and pressing upon them are the powerful and numerous Sinaugolo, who originally came from the neighbourhood of Taberogoro close to Mount Giles. Their villages are most numerous in the open, often hilly, country round the Rigo Government station, but their district extends in a north-easterly direction beyond the Vanigela River as far as Mount Giles. The forward movement of the Sinaugolo is still taking place, some three miles having been gained in the last ten years. One of their villages, Kemaia, is now to some extent a fishing village, and its inhabitants carry on a brisk trade with the coast villages, principally exchanging their garden produce for fish.

In the following pages, diseases which among ourselves would be considered respectively medical or surgical, are classified apart.

MEDICINE.

But few diseases are recognized definitely enough to receive a name.

Malaria, called *enaguli*, literally coldness, is named from the shivering fits which characterize its franker manifestations; the patient is laid in the sun or by a fire while his head and abdomen may be bathed with hot water. A special term, *beni*, is reserved for the chronically enlarged spleen present in most of the Sinaugolo children and in many of the adults. This is not recognized as being due to malaria, and, when persisting beyond childhood, is treated by tattooing a couple of slightly curved lines on the flank which run at almost a right angle to the costal margin over the area of the enlarged spleen. (Pl. XXIII, 1.)

Dysentery, *kukurara*, literally bloody faeces, is practically untreated. Apparently among the Sinaugolo it is rarely as fatal as among the neighbouring coast tribes.

Leucoderma, tabu, is said to be due to the attacks of small organisms living in the sand and mud of the often half-dried creeks from which the natives obtain water. The rare occurrence of partial albinism in children was not explained.

Tokelau ringworm (*tinea desquamans*), *levu*, has probably been recently introduced, and it is still rare in the district; it is usually untreated and no reason for its origin is known or suggested. Sometimes the foul end of the rough leaf-covered cigarette used in smoking a native pipe is rubbed over the patch; this has probably been learnt directly or indirectly from the white man.

Rheumatoid arthritis, *nagama*, is believed to be hereditary and seems to be extraordinarily common; the term *nagama* is, however, used for all firm swellings and painful sensations which are connected with or felt in the deeper structures of the limbs, and is not even limited to those in the neighbourhood of joints. It is treated by an elaborate system of tattooing.

The diagrams illustrating the use of tattoo marks in medicine were copied from the person of Argera Vanami, who had long suffered pain, presumably



DESIGNS OF TATTOOING USED IN MEDICINE.
FIG. 1.—*Bubu*.



FIG. 2.—*Dodo*.



DESIGNS OF TATTOOING USED IN MEDICINE.
FIG. 3.—*Mularapuli*.

rheumatoid in origin. Several joints were involved, their condition on examination being typical of rheumatoid arthritis. The designs employed, which are for the most part grouped around joints, consist principally of three types, *bubu* (Fig. 1), *dodo* (Fig. 2), and *mularapuli* (Fig. 3). None of these are exclusively medical in their application, *mularapuli* indeed, is a commonly used design, and variants of

all three types are tattooed on the back, thighs and calves as distinctions for taking life. It was not possible to ascertain the origin or meaning of the various types of tattoo marks. The two roughly Y-shaped marks on the back of the neck (Pl. XXIII, 2), are for local pain and stiffness, the same holds good for the double series of concentric arcs over the left shoulder blade. The triangular marks under the left breast (Pl. XXIII, 1) appear to have been tattooed for palpitations or uneasy sensations in the region of the heart. The two lines running downwards from the left costal margin (Pl. XXIII, 1) have already been alluded to. The design on the forehead is held to cure headache.

Yaws, *koeva*, is attributed to the child suckling after it has been weaned while its mother is asleep. Husband and wife should keep apart until the child is weaned; if cohabitation is resumed before this, the milk is considered to acquire noxious properties; the words used, according to Mr. A. C. English, Government Agent for the Rigo District, actually implying that the child has imbibed semen

with or in place of milk, communication being considered to exist between the abdomen and the breasts (*vide* midwifery: *infra*, p. 300). If the ulceration is unduly prolonged or severe, sorcery is in addition suspected. The treatment is to wash the tubercles and resultant sores with hot water, salt if possible.

Mamagaru, a slight form of urethritis, characterized by scalding during micturition, is recognized in both sexes. It is not serious, generally lasts less than a day, and is not spread by intercourse. It is stated to be due to a piece of chewed sugar cane being carelessly thrown where the midday sun would shine upon it. The man or woman who had chewed it would then suffer from scalding and increased frequency of micturition, and it was said that these symptoms never occurred before midday and invariably ceased before daylight next morning.

SURGERY.

Burns.—The juice of *kalavagala* (*Hoya australis*) is painted over the burnt part; this hardens and forms a more or less sticky covering which only very slowly wears off.

Fractures are usually put up in short wooden splints, padded with leaves. The joints above and below the injury are never immobilized; before applying the splints the fragments are manipulated into place till grating is felt, when one man holds the limb in position while another bandages on the splints with long strips of the dried cortex of the banana. Dislocations are generally rather forcibly reduced, probably that of the shoulder is the only one recognized and treated.

Hæmorrhage.—Hæmorrhage is arrested by laying the flat surface of a longitudinally split banana stalk against the wound and while the edges are held together firmly bandaging this in position. Neither sutures or ligatures are ever employed.

Snake bite.—Death from snake bite is generally supposed to be due to the snake having been influenced by a sorcerer. Bites inflicted in the morning are stated to be invariably fatal; later on in the day this is not necessarily the case. No treatment is adopted, though if the patient survive any time he is generally starved. Although the tribesmen have no accurate knowledge of virulent and non-virulent snakes, nor any idea of the nature of the virus, they eat carpet snake and do not fear death if bitten by it.

The Sinaugolo take great care of their invalids and never isolate them. A sick man on a journey would be carried by four of his fellow-tribesmen in a roughly made litter, and the best food would be regularly brought to him. In extreme cases even the regular scrupulous cleanliness of their villages is to some extent sacrificed; the invalid being carried to a hole in the floor through which he defecates, the pigs below the house (built as it is on piles) acting as scavengers. In one case in which, owing to pressure brought to bear by the Government Agent, a sick man was isolated in a garden house, the experiment was abandoned, as the patient was rather neglected.

All the above-mentioned diseases are common and present well-defined and fairly constant symptoms. New, rare, or obscure complaints, especially if they should prove fatal, are put down to the machinations of a sorcerer, *ora*, generally belonging to a distant tribe. An ill-defined supernatural agency, *mulava*, was also held responsible for unexpected deaths; either *ora* or *mulava* might work by snake bite. "A man is surprised while asleep by the *ora* or his accomplices, and mortally wounded and mutilated; his head is cut off; he is disembowelled and speared in many places. The wounds are then sewed up and a mysterious ointment applied which has the property of at once healing them. A time is then fixed by the *ora* for the victim to meet his death by snake bite. In case of death by natural causes the evil spirit adopts the same means for encompassing his end, omitting the employment of a snake as his agent."

Sometimes should all ordinary treatment prove of no avail, an old man or woman—generally the latter—who has the reputation of being a sorcerer, is consulted. "She, provided with the usual paraphernalia of her office, such as dried herbs, fish and kangaroo bones, pebbles, locks of hair and fur, etc., seats herself close to the patient, and proceeds to business. She shampoos, makes passes over, and breathes upon the parts of the body affected, meanwhile muttering an inaudible jargon. After a short time spent in this manner, she, carefully timing her opportunity so as to escape detection, furtively abstracts a small bone or pebble from her heap of 'medical comforts,' and concealing it in her hands, pretends to have taken it from the patient's body. The instant relief afforded by this treatment is wonderful. The doctor's fees are somewhat exorbitant, and are not within the means of every one. Should the patient still grow worse, a pig is killed, a small feast prepared and the patient's relations and friends invited to partake of the food. . . . It is hoped that the secret enemy may be among the guests, and that the amiable frame of mind caused by a well-filled belly may induce him to withdraw the evil he has placed on the sick man."²

CONCEPTION AND PREGNANCY.

Diagnosis of Pregnancy.—Pregnancy—which is considered to be due to frequent cohabitation—is diagnosed by the enlargement of the breasts and pigmentation of the nipples and areolæ. Amenorrhœa is not regarded as an early or valuable sign. Conception is supposed to take place in the breasts, since these first show signs of the mother's condition. When the child has attained a certain size, it drops to the lower part of the abdomen. As far as could be ascertained, and the matter was carefully gone into, it was not realized that there was any special intra-abdominal organ in which the child developed and was lodged; perhaps the belief that conception takes place in the breasts may in part be due to the undeveloped condition in which the young of the wallaby—a much hunted and therefore

¹ *Annual Report on British New Guinea, 1893, 1894*, p. 65; A. C. English on the "Customs of the Sinaugolo Tribe."

² *Ibid.*, 1892, 1893, p. 66; A. C. English on the "Customs of the Sinaugolo Tribe."

well-known animal—are found attached to the nipple, where they are believed to have grown. A little rough dissection in the company of natives showed that they knew nothing as to the function or existence of the uteri in the wallaby, and as elicited by English nearly the same might be said of the vagina.

Morning sickness with loss of appetite is recognized as a sign of pregnancy, and is stated to cease as soon as the child's bones are formed. Frequent micturition is also considered a symptom of pregnancy.

Taboos.—Cohabitation should be suspended during pregnancy or the child runs the risk of becoming deformed. This rule, however, appears not to be rigorously adhered to. Certain species of yam and fish are forbidden to the pregnant woman. These vary in every case, the expectant mother tabooing certain kinds of food to herself and rigorously observing her self-imposed restrictions; if she did not the child might be born weak or deformed, or suffer from *beni* or from ulceration of the stump of the cord. It was not possible to determine the precise reason which induced a woman to taboo one sort of yam or fish and not others; it may possibly be due to different individuals having under normal conditions experienced varying degrees of nausea and discomfort after having partaken heartily or too abundantly of certain food, which might thereafter be considered especially liable to produce vomiting and colic, and hence to injure the child.

CHILDBIRTH.

"On the near approach of the time when the birth of the child is expected, a feast is given by the husband to the wives of his neighbours. It is called *latato*. Subsequent to the birth another feast called *melo-oli-gwali* is given. Should this not be done, it is believed that the child will be continually crying. A valuable present is then made by the husband to his father-in-law, who returns the compliment in kind."

Labour takes place in the bush, where the woman, half-squatting on a cocoanut, grasps with her hand a young sapling or other convenient upright (Pl. XXIII, 3), or failing these, a rope hanging from the bough of a tree; should labour pains, however, come on suddenly at night the child is delivered in the house, no attempt being made to convey the woman to the bush. There are no midwives among the Sinaugolo, and operative interference is never undertaken, though it is stated that "should the labour be severe, a woman whose speciality it is, is called in. She relieves the pain by mystic passes and unintelligible mutterings, anon pouring water over the sufferer's head." Any of the expectant mother's relatives, often her mother or aunt, may see her through her trouble and, except in the case of helping a stranger, from whom she would get a wooden bowl or petticoat, accepts no fee; her food, however, is always provided for her.

One of the mother's friends cuts the cord, which is neither tied nor twisted, with a bamboo knife at the length of the child's thigh from the abdomen. A few

¹ *Annual Report*, 1893-1894, A. C. English, p. 66.

drops of milk are then squeezed from the mother's breast on to the stump of the cord which, when it falls off, is tied to the handle of the string bag, *keper*, in which the child sleeps; subsequently being buried under a weed heap in the garden if the owner is a girl, and hidden in the axil of a banana leaf if it belonged to a boy. The placenta is suspended in a small bag from a tree and neglected.

The mother is generally kept in the house for about a week after the child is born, during which time if she is a *primipara* her husband may not enter the house in which she is. On or about the eighth day "he and his wife, carrying the child, repair to the gardens, where the woman soils her hands by rubbing them in the dirt." For about the first month after her confinement, a woman, though she works and weeds in the garden, may prepare or handle no food; she may not even cook for herself, and when eating the food prepared for her by her friends must use a sharpened stick to transfer it to her mouth. There is apparently no purification ceremony of any sort on discontinuing this regime. During the period of suckling she is supposed to forego cohabitation and to observe the same taboos as she does during pregnancy.

Complications of labour.—Difficult labours are uncommon and abnormal presentations are probably rare. Two footling presentations were however said to have occurred within recent memory.

No treatment is as a rule adopted to resuscitate stillborn children. At Kemaia which, as stated above, is to some extent a fishing village, the shells employed as sinkers for the fishing nets are rattled in the child's ear; here as elsewhere among the Sinaungolo when it is certain that the child is dead, it, together with the placenta, is placed in a string basket and hung upon a tree.

Twins cause no special wonder or disgust.

ABORTION.

Connection often takes place before menstruation is established, and in any case it is customary for a girl to dispose of her favours as she chooses before she is married. Some keep a tally of their intrigues by knots made in the string fringe commonly attached to neck ornaments. Pre-conjugal children are, however, rare, and were stated to depreciate seriously the girl's value; hence abortion is commonly attempted, and if this fails the girl's mother often kills her unwelcome grandchild soon after its birth. To induce abortion violent exercise, especially jumping or applying hot stones to the abdomen or lying prone while another woman stands on the patient's back, are the methods usually adopted. These are stated to be effectual only before the bones are formed, while the child is *rara*, i.e., blood; this period may be assumed to cover the first three or four months of pregnancy. Abortion is practised more or less secretly, but besides this there is another and far more secret ceremony which a woman, who had already had children but wishes to have no more, may undertake. The ceremony is known as *ginigabani*,

¹ *Annual Report*, 1893-1894, A. C. English, p. 66.

and considerable difficulty was experienced in eliciting details, so much so that for the following account I am indebted to A. C. English, who kindly investigated the matter for me after I had left the district. There is generally a woman in the village or one of the surrounding villages who is supposed to be gifted with a power inherited from her mother of causing women to become *hageabani*, literally incapable of having more children. Suppose a woman considers she has enough children, she will by stealth seize an opportunity of consulting such a woman and will pay her for her services. The woman gifted with the power sits down behind and as close as possible to her patient, over whose abdomen she makes passes while muttering incomprehensible charms. At the same time herbs or roots are burnt, the smoke of which the patient inhales. The latter in paying passes the fee behind her own back to the operator without looking round, and she is told not to mention her name or to see her again. The exact ritual observed varies according to the power inherited by the practitioner; often a vegetable infusion is drunk by the patient as part of the charm. The operator at the time of arranging what payment she is to receive should in honour ask if the woman's husband had given his consent, and refuse to operate in the contrary event. A woman gifted with the above powers is generally supposed to be able to cause conception to take place, and would sometimes be called upon for that purpose by wives who were jealous of their husband's infidelities. The operator seated first in front and then behind her patient makes passes over the latter's stomach, muttering charms and expectorating chewed areca nut over her patient's abdomen.

MENSTRUATION.

No ceremony admitting a girl to womanhood takes place at the first appearance of the catamenia; nor, except that she does not cohabit, does a menstruating woman alter her mode of life in any way. When a girl's appearance and the development of her breasts become such as to suggest that she will soon be a woman, the patterns which have been tattooed on her legs, thighs and buttocks from time to time are completed by a pattern, *bunegoala*,¹ tattooed on either side of the vulva. The moon is considered responsible for the appearance of the menses, the legend being the following:—

In olden days the moon lived on earth as a boy of diminutive size covered all over with light-coloured hair. He used to follow the women and girls about the gardens. For a long time no one took any notice of him till one day he pretended to cry, when a married woman picked him up and put him in her string bag, *keper*, which was hanging from a branch of a tree. A variant of this part of the story is that the boy himself climbed into the *keper* and was found there crying. The woman said, "Don't cry, I'll get some food and cook it for you." While she was digging yams for this purpose the boy jumped out of the bag, broke off a

¹ "Until this design is tattooed on a girl she is of no value as a wife." *Annual Report*, 1893-1894, A. C. English, p. 69, where a drawing of *bunegoala* is given.

stalk of sugar cane and went to the outskirts of the garden to eat it. He then had connection with the woman, with the result that she became pregnant.

Subsequently her husband accused her of an intrigue with the boy; this she denied, but he, feeling suspicious, watched her, and ere long caught the couple together, after which the boy returned to the string bag now hanging in a garden house and again pretended to cry. The woman said, "Don't cry, I'm getting food for you; when you have eaten it we'll go to the village." The husband then set fire to the garden house in front and behind; the boy, who could not escape, was killed, his blood spurted to the sky and there became the moon, the latter announcing that in revenge all girls and young women should bleed when he appeared, but that older and pregnant women should be exempt since, in the latter case, he was responsible for their condition.

My best thanks are due to Mr. A. C. English, Government Agent for the Rigo district, for much help freely given, without which it would have been impossible to obtain the confidence of the natives. My thanks are also due to Mrs. A. Solomon and to Mr. Norman Hardy for the figures illustrating these notes drawn from diagrams and a photograph taken at Rigo.



Figs. 1, 2.—Tattoo designs used in medicine.

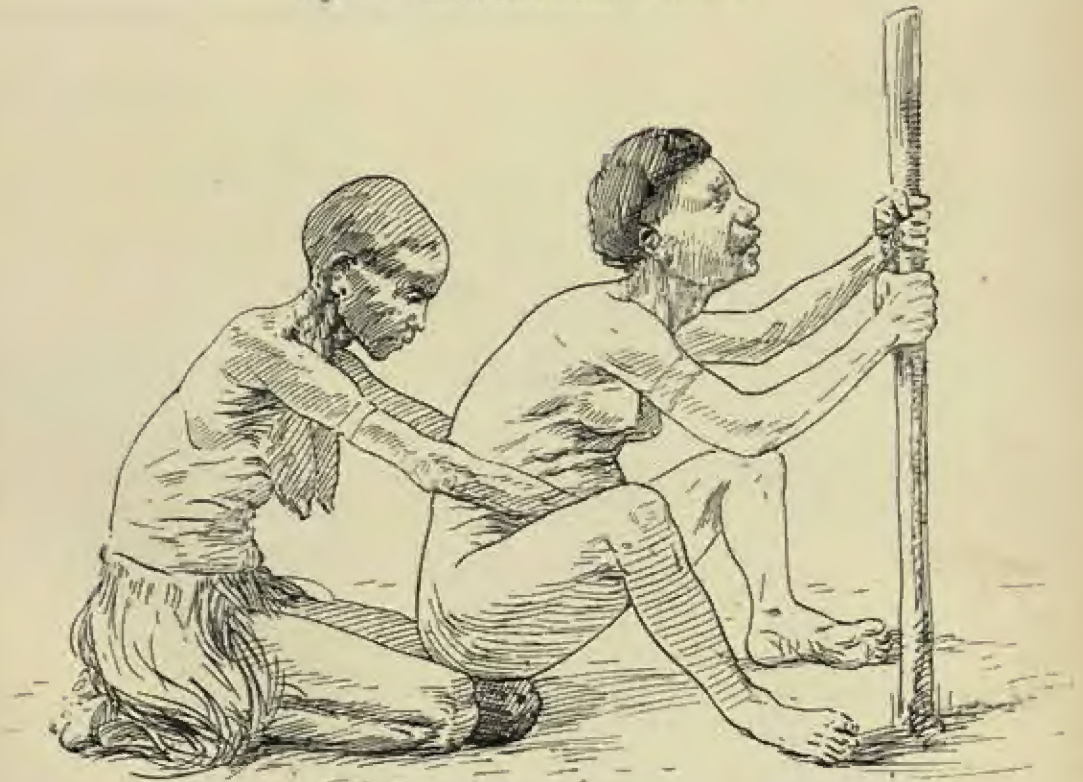


Fig. 3.

NOTES ON THE WAGOGO OF GERMAN EAST AFRICA.

BY THE REV. HENRY COLE.¹

TRIBES.

1. *Are the natives divided into tribes, clans, or castes? Are these tribes, clans, or castes subdivided? Enumerate the tribes, etc.*

1. They are divided into tribes and clans, and these tribes are again subdivided.

2. *Are the tribes, etc., distinguished by differences in dress, in the mode of wearing the hair, etc.?*

2. A. *Tribes*—Wagogo, Wanyambwa, and Wasi: the second and third are branches of the first. They all speak practically the same language, Cigogo.

(a) The Wagogo are of slight build, black complexion; speak with a drawling tone; are great stoppers at home, and very much lacking in enterprise. In famine time they eat the fruit of the wild cocoa-nut tree and a tuber called *ng'hwalu*.

(b) The Wanyambwa are not so dark as the Wagogo; they saturate their clothes with oil and red clay; are very fond of iron ornaments, and are rather enterprising.

(c) The Wasi wear only a loin cloth as covering, but they adorn themselves with multitudes of beads, and wear their hair in mop-like fashion.

B. *Clans*, with corresponding *Muziro* (things forbidden to be eaten or used), cf. 68 c.

(1) Wanyagowe ... *Muhanga*, an animal about the size of a hog, which lives principally on white ants. It sleeps in a hole, underground, in the daytime.

(2) Wanyang'anga ... *Mbala* (bush buck).

(3) Wanyacipegu ... *Fumbu* (a certain part of the stomach).

(4) Wanyagatwa ... *Ng'hanu* (civet cat) and *mbala*.

(5) Wasewando ... *Mbala*.

(6) Wamunyanzoka ... Things killed by snake.

(7) Wambuga... ... Sheep with short tail.

¹ The writer of these notes is on the staff of the Church Missionary Society, and is stationed at Mpwapwa, in German East Africa. The notes take the form of answers to Dr. J. G. Frazer's "Ethnological Questions," which are here reprinted for convenience of reference.

<i>Clans.</i>		<i>Muziro.</i>
(8) Wasenhyina	...	<i>Cisunha</i> (very tiny red bird) and <i>Nhyenesi</i> (a bird said to warn of danger).
(9) Watemekwira	...	<i>Muhanga</i> .
(10) Wakando	...	<i>Fumbu</i> .
(11) Wamusukuma	...	<i>Mbata</i> (roan antelope).
(12) Waseng'ongo	...	To carry a spear which is concave on both sides.
(13) Wanyang'hwalo	...	<i>Ng'hwake</i> (a kind of wild vegetable).
(14) Wamunymbwa	...	Red clothes.
(15) Wamunyatoma	...	" "
(16) Wasembuee	...	<i>Muhanga</i> .
(17) Wegongo	...	<i>Nhongolo</i> (eland).
(18) Wamunyiranga	...	<i>Cisira</i> (a kind of squirrel).
(19) Wamunyanguluwe	...	<i>Mbala</i> , or a spotted animal of any kind.
(20) Wamunyang'hali	...	<i>Wamusitakwendwa</i> (a tree which they don't use for building or firewood).
(21) Wamunyanduli	...	<i>Nhongolo</i> .
(22) Wanyeguruwi	...	<i>Ngubi</i> (pig).
(23) Wanyagundu	...	Red clothes.
(24) Wanyelangali	...	<i>Nziriri</i> (animal something like badger).
(25) Wasigani	...	Premature calf.
(26) Wang'halunga	...	<i>Ng'halu</i> (a small bulb resembling onion).
(27) Wamusitakwendwa	...	Tree of this name which they don't use for building or firewood [cf. (20) above].
(28) Wamunysachuma	...	Red copper wire.
(29) Wanyambumbwa	...	<i>Machikwang'hala</i> (a bird which makes a peculiar noise when flying).
(30) Wabalagudi	...	<i>Naagulagu</i> (a bulb which is used in anointing and for stomach-ache).
(31) Waseyingwe	...	<i>Citwica</i> (entrails of animal).
(32) Wamunyaciri	...	<i>Itoga</i> (liver).
(33) Wasehaba	...	<i>Cipchema</i> (end of breastbone).

3. *What kind of names are borne by the tribes, clans, etc.? Are the names ever the names of animals, plants, or other natural objects?*

3. Individuals and clans, in several instances, have the names of plants, animals, seasons of the year and important events. [See preceding list.]

4. *Do the members of the tribe, clan, or caste regard as sacred the animal, plant, etc., from which they take their names? Do they refuse to kill and eat the animal or plant from which they take their name? (N.B.—The animal, plant, etc., which gives its name to a tribe, clan, or caste, and which is held sacred by the members of that tribe, clan or caste, is called a "Totem.")*

4. The Wamusitakwendwa are afraid to use the tree in building, etc., from which they take their name. But with them, as with other clans, it is a matter of fear, and not reverence, which keeps them from touching their *muziro* (totems).

5. *What do they think would happen to them if they were to kill or eat such animals or plants?*

5. It is the relations of the person who eat the totem, and not the transgressor himself, who are endangered by the act. Thus when they see a man's children suffering from scabs in their heads, they say at once that the father has eaten his *muziro* (totem) and hence the children have *mapere* (scabs).

6. *Have they any stories as to the origin of the tribes, clans, or castes? and as to the connection of the tribes, etc., with their totems?*

6. They say they came from *kutakama* (the south), but beyond this they don't seem to have any stories about the origin of the tribes.

BIRTH, DESCENT, ADOPTION.

7. *What ceremonies are observed at birth?*

7. When the navel string has been dried up, the room in which the child has been born is deemed clean or pure (i.e., there is no more danger to be feared). On the fifth day after birth the child is taken out of doors. The father now looks for *mhihi* (charms), which, when procured, are put upon the wrists, ankles, neck and loins of the little one. If a male child, the midwife takes a billhook, axe, hoe, adze and a kind of spokeshave, with the child on her back, when she solemnly goes through the form of initiating it into the mysteries of its future life. "We clear the forest," she says, "in order that we may cultivate; we sow, in order that we may eat and get rice." She then sprinkles water upon the child, saying, "It rains here upon earth." She winds up by telling it from whence its ancestors came, and their different totems.

If a female, the midwife goes through the process of corn-grinding, and says, "We grind corn, we are females." Next she goes through the process of pounding and sifting corn. She then takes a vegetable vessel, and calabashes used in carrying water; also a piece of firewood, which she chops up. She concludes the performance, as in the former case, by telling the babe from whence its ancestors came.

8. *Is the mother secluded? Has she to observe any rules as to diet, etc., during pregnancy or after the birth? Is she regarded as unclean? and has she to perform any ceremonies before being readmitted to society?*

8. The mother has to observe rules as to diet, etc., during pregnancy. She is not regarded as unclean after birth of child.

9. *Has her husband to observe any rules as to diet, etc., before or after the birth? Does he behave in any special way, or is he subjected to any special treatment at such times?*

9. The husband has to observe the medicine man's prescribed regimen the same as the wife before birth of child.

10. *How is the child named? Is there any ceremony like baptism? Any god-father or godmother?—*Named by midwife. No ceremony.

11. *Are there any special observances in regard to infants whose elder brothers or sisters have died previously?—*No.

12. *Are children ever killed at birth? Is there a regular custom of killing the first born or last born children? Are female infants killed rather than male infants, or vice versa?*

12. The Wetumba or Wasagara kill twins, but the Wagogo have no such custom. The Wetumba also kill infants when the mother conceived the first time after menstruation, also if the feet come first at birth; or if one hand protrudes at birth.

13. *When the father and mother belong to different tribes, clans, or castes, do the children take the name of the father's tribe, etc., or of the mother's? Are they reckoned to the tribe, etc., of the father, or to that of the mother?—*Father's.

14. *Is adoption practised? With what ceremonies is it accompanied?*

14. Little practised. No ceremony.

PUBERTY.

15. *Are any ceremonies performed on lads at puberty? Describe such ceremonies fully.—*No.

16. *Is there any pretence at such rites of killing the lad and then restoring him to life?—*No.

17. *After these initiatory rites, are the lads forbidden to see women for a certain time? If so, why?—*[No reply.]

18. *Do they at these or other times circumcise, knock out, chip, or file the teeth, bore the nose, distend the ears, insert rings in the lips, etc.? What reasons do they give for such practices?*

18. (a) Circumcision is practised periodically, when batches of young men have the rite performed on them. Some run away to the rite, and others are taken by their fathers. When the *Mung'hunga* (doctor) has circumcised a number of youths belonging to a certain district, their parents bring them to a shelter provided for them some distance from the village, where they are initiated into the mysteries of their tribe. Stubborn, disobedient youths get thrashed unmercifully by their instructors, but they have to grin and bear it. When their sores are healed, they are provided with curious coverings made of straw, called *masase*. Their bodies are plastered with white clay and oil. Thus attired and adorned they approach the village in the evening, where they eat and sleep for the night, returning to their *ikumbi* (camp) in the morning, where they spend the day. They often, however, herd cattle and do other work during the daytime. But they are not fully and finally readmitted to society until they have gone through a ceremonial washing in a river. Then they anoint themselves, don new clothes

and adorn themselves. The proceedings are wound up with drinking and dancing. Five days afterwards they may be seen going around to the different hamlets in the neighbourhood, standing speechless at the door of each house as they come to it. There they wait patiently until they get something, when they open their mouths and speak. They go around in this fashion for three days. Both sexes are circumcised. Their instructors tell the lads that they mustn't be in a hurry in paying their addresses to the opposite sex.

(b) Two lower front teeth are knocked out, and ears are distended. The reasons given are as follows:—(a) That it is a tribal mark; (β) The utility of the aperture in case of lockjaw; (γ) Adornment.

19. *Do they tattoo or raise cicatrices on their bodies at puberty or on other occasions? What patterns are tattooed or incised? On what parts of the body are they made? Drawings of the tattoo marks would be useful.*

19. Youths of both sexes have themselves tattooed. Tattoo marks are (a) crescent-shaped, and extend from above the eyebrows to underneath the eyes; (b) also a straight line down the centre of the forehead; made with a dye produced from a bush named *humbito*.

20. *What ceremonies accompany the tattooing?*—None.

21. *Are both men and women tattooed, or only men, or only women?*—Both.

22. *Do the tattoo marks serve as badges to distinguish tribes, clans, or castes?*
—No.

23. *Are any ceremonies performed on girls at puberty?*

23. Dancing and shouting for joy, until the whole country around becomes aware of the fact.

24. *Is a girl secluded at her first menstruation? What rules has she to observe at such times? Is she allowed to see the sun or fire?*

24. She is excluded, and undergoes a course of instruction, some of which is good and some bad. (She may be cloistered from the public gaze for a whole year. This is partly to protect her from being deflowered, and partly to wait for the harvest, when food is more plentiful, so that her reappearing in public may be hailed with a feast.)¹

The first three days after exclusion the girl has her cooking done for her: then she has cooking utensils brought to her, and is told that she must now do her own cooking.

She is not allowed to look at young men. She can look at fire and sun.

25. *Are women generally secluded at menstruation?*—No. *What rules have they to observe at these times?*

Rules:—1. Cannot put salt in food.

2. Must face the person passing her.

3. Cannot sit on the stile. Must sit on the ground.

¹ The remarks within brackets refer principally to the custom of the Wetumba

Rules:—4. Cannot sleep with husband.

5. Cannot serve up food.

6. Must not give food into husband's hand.

7. If taking medicine, must not go to garden to cultivate.

8. Must not play with husband.

9. Must not stand up in presence of others.

10. Must not cross neighbour's garden.

11. Must not go on a journey.

26. *What do they suppose is the cause of menstruation? What do they think would be the effect if a man were to see or touch a menstruous woman?*

26. (a) They have no theory. (b) They think it very bad for a man to touch a woman in this condition, and they have an idea that evil will undoubtedly befall him by so doing. Long ago it was a capital offence.

MARRIAGE.

27. *Is a man compelled, or is he forbidden, to marry a woman of the same tribe, clan, or caste as himself?*

27. Long ago a man used not to marry a woman out of his own tribe. In days gone by the Wagogo used to have a saying to the effect that a donkey and a cow could not marry, meaning that a master could not marry his slave. Now the Wagogo have no compunction in marrying women of other tribes, whether they are their slaves or not.

28. *In the case where persons of the same tribe, clan, or caste are not allowed to marry, are they allowed to have sexual intercourse without marriage, or would this be equally wrong?—No prohibition.*

29. *Are any natural ill effects supposed to follow a breach of these sexual rules? Is any punishment inflicted on the offender by the members of the tribe, clan, or caste?—None.*

30. *What are the forbidden degrees of consanguinity in relation to marriage?*

30. Brothers and sisters and first cousins. With regard to the latter, however, they are breaking through the custom. When children of such marriage (*i.e.*, of first cousins) die young, the parents offer up sheep as sacrifice, and they each wear a thong of the skin on one of their wrists. The thong is called *chigowi*.

31. *May a man have several wives? (polygamy).—31. Yes.*

32. *May a woman have several husbands? (polyandry).—32. No.*

33. *What reasons do they give for the practice of polygamy or polyandry?*

33. Reasons [for polygamy]:—

1. In order that they may have many children.

2. In order to be able to entertain guests; as the women grind the corn and cook.

3. Illness; in order that when one is ill there may be another wife to take her place.

4. Death.

5. Honour.

6. Lust. Perhaps this is the greatest reason of all.

34. *How does a man obtain a wife? By purchase, capture, or how?*

34. Purchase. The husband who doesn't purchase is reckoned the slave of his wife's friends.

35. *Does a man take his wife to his own home, or does he live with his wife's family?—Both.*

36. *Do bride and bridegroom prepare for marriage by fasting, bleeding, keeping awake the night before marriage, or in other ways?—No special preparations.*

37. *Describe the marriage ceremonies fully, including the ceremonies observed at bringing the bride into the house or hut of the bridegroom.*

37. The palaver being over, and the day of the nuptials having arrived, the brothers or sisters, or both, go to fetch the bridegroom. If he lives close by, they carry him on their shoulders to the house of the bride. Having arrived at the house, he is shown into the room where the ceremony is to take place. The bride and bridegroom sit on stools in their nudity, whilst they are washed in turn, the bridegroom leading the way. He is washed by his brother-in-law, or, in his absence, by some other relative of the bride. The sister-in-law of the bridegroom (*i.e.*, bride's sister) washes the bride. The washing being over, they are anointed with oil. They then dress. The mothers of the happy pair now enjoin them to love one another and to do their work as they ought. The room is crowded with friends during the ceremony.

Next comes the start for the bridegroom's house. The bridegroom leaves some time before the bride. When it is a short distance to her future home, the bride is stopped every few yards on the road by begging individuals, who get all they can from the bridegroom's friends. When they think they have given enough, one of the bridegroom's friends takes the bride on his shoulders and runs away with her in triumph to her new home.

There does not appear to be any feast.

38. *Is the bride veiled? Are there any ceremonies at veiling or unveiling her?—Yes. No ceremony.*

39. *Is the bride or bridegroom ever represented at the marriage ceremony by a proxy or dummy?—No.*

40. *Is there anything corresponding to bridesmaids and best men?—No.*

41. *Are any ceremonies observed by bride and bridegroom on the day after marriage?*

41. No. On the fourth day, however, they go to visit the parents of the bride accompanied by a young man and young woman as attendants. Here they stop four days, when they visit the parents of the bridegroom, with whom they stop four days also.

42. *Does a man cohabit with his wife immediately after marriage, or does he refrain for a certain time, say several days or months?*—42. Immediately.

43. *Does he visit his wife only by stealth for some time after marriage? If so, why?*—They have no such custom.

44. *Is it required or permitted that the wife should be deflowered by a person other than her husband? or that, after the marriage ceremony, she shall have connection with other persons before she may cohabit with her husband?*

44. No. But amongst the Wahehe the bridegroom has first to sleep with his mother-in-law, when he may cohabit with the daughter.

A case happened here lately where the marriage was broken off because the mother of the bride (who was a Wahehe) wanted the bridegroom to sleep with her first, but he, being an Mgogo, refused.

45. *Are there occasions on which men abstain from cohabiting with women, as during menstruation, pregnancy, after childbirth till the child is weaned, previous to and during hunting, fishing, war, or other occasions?*

45. (a) Abstain during menstruation. (b) Some abstain during pregnancy.

(c) A few months after childbirth when a man wants to cohabit with his wife, he first gives his child medicine in order that no harm may come to it through his cohabiting with its mother. Neither does he take the child in his arms, nor go to other women before he has administered the medicine.

(d) A woman is afraid to go with other men during her husband's absence at war.

46. *Are there occasions when men exchange wives?*—Yes.

46A. *What becomes of a widow? is she free to marry as she likes? have the relations of her late husband any rights over her?*

46A. She becomes the wife of a brother or other relative of deceased husband. She may even become the wife of her stepson! A woman may refuse to marry a relative of her late husband, but cases of this kind are rare.

47. *May a man look at or speak to his mother-in-law? May a woman look at or speak to her father-in-law?*

47. He may speak to her at a distance, but not look at her. The same applies to a woman and her father-in-law.

48. *May brothers and sisters speak to each other?*—Yes.

DISEASE AND DEATH.

49. *What do they think are the causes of disease and death?*

49. Most illnesses and death are traced to witchcraft, but some are ascribed to *Mulungu* (God). As to the origin of death the following legend is related, cf. p. 333 below:—

A man and hyena had a dialogue when the man said, "We want to live

always." The hyena said, "You had better not, as we want to eat your dead bodies." Therefore we die, according to the desire of the hyena.

50. *How do they try to cure disease?*

50. By medicines and sacrifices.—The medicine man takes his patient to cross-roads where he prepares his medicine with incantations, etc. Some of the medicine is taken by the patient and some is placed under a pot, turned upside-down, and left at the cross roads, in the hope that someone may step over it and have the illness of the patient transferred to him. The neighbourhood of large trees is also chosen as favourable for the exercise of the healing art. But here the medicine man's tactics are somewhat different. Instead of placing the medicine under a pot, he plasters it, or some blood of the patient, on a wooden peg or skewer which he drives into a tree, hoping that someone will pass that way and draw out the peg and carry away with him the disease of the patient.

In the case of a woman whose children have all died, and she has not yet left off child-bearing, the medicine man directs her not to nurse her next child and it may be that he also tells her to insert a cowrie in the lobe of the child's ear.

51. *If disease is thought to be caused by the presence of a demon or spirit in the sick person, how do they expel the demon or spirit?*

51. By offering up sacrifice at the grave of deceased relative whose spirit is supposed to be troubling the sick person.

52. *What ceremonies take place at death?*

52. The limbs are doubled together; and the corpse washed and anointed. The clothes that the deceased was wearing at the time of death are taken off, and he has a new cloth put over him. All his ornaments are taken off, save an iron bracelet, which is removed from the left to the right wrist, in case it had been on the former wrist at death. If the deceased had no iron bracelet, then a bracelet of white beads is put on his right wrist. The bracelet is put on the left wrist of a female. The corpse is put in the grave on its right side, if the deceased was a male, and *vice versa* if a female. The corpse having been thus placed in the grave, there follows a kind of service in which the dead person is apostrophized as follows:—"Sleep well; don't trouble those whom you have left behind; go in peace; turn your face upwards" (*i.e.*, bless us). Then the grave is filled in.

53. *How are the dead disposed of?*

53. (a) Some are buried in the courtyards of the hamlets;

(b) Others near the hamlets outside;

(c) Others in forest (*i.e.*, those who have died from infectious disease);

(d) Others in the hollows of baobab trees;

(e) Others in clefts of rocks;

(f) And others thrust into holes of *mihanga*.

54. *Is the ghost of the departed feared? Are any steps taken to propitiate the ghost or to prevent its return?*

54. (a) Yes. He is not named without the epithet *mwuzi* ("departed"), prefixed. (b) Yes. Sacrifices.

55. *Are the persons who have handled the corpse regarded as unclean, and obliged to purify themselves by means of fire, water, etc.?*

55. Yes. They wash themselves at the grave and sleep at the house of the departed, not returning to their homes until the following day. In the meantime they have their heads shaved, and eat a fowl which they receive at the place. The relations purify the house with entrails of goat mixed with water and a certain kind of grass.

56. *Have the relations of the deceased (particularly the widow or widower) to observe any special rules for some time after the death? What is the mourning garb?*

56. All the near relations of the deceased have their heads shaven. The clothes of the deceased are washed and purified with stomach of an animal.

If the deceased has been a big man, his tools and weapons are purified with *wupu* (stomach of animal) and put safely by until the days of mourning are ended, when the eldest son receives the *vipe* (i.e., the *wupu* above). The mourning is wound up with a feast.

57. *Are there any special customs or superstitions about the bones of the dead?*—No.

MURDER.

58. *Is a murder avenged by the relations of the murdered person? Are all members of the victim's tribe, clan, or caste bound to avenge his death? And are all members of the murderer's tribe, clan, or caste responsible?*

58. Yes. (a) They avenge as a matter of worldly policy. (b) Yes.

59. *Is compensation for homicide allowed? To whom is it paid, or how is it apportioned?*

59. Yes. Paid to nearest relative, who, however, divides it amongst other relations.

60. *Is a murderer regarded as unclean, and has he to undergo purification before he is re-admitted to society? Are there any special rules as to his eating and drinking, his dress, the vessels he uses, etc.?*

60. No. A man who kills one or more of his enemies (in battle, etc.) receives a goat as reward, and the victor paints a red circle around his right eye and a black circle around his left eye; he also paints his spear red at point and black in the middle. He holds the spear in his hand when dancing, in order that it may bear silent testimony to his bravery.

PROPERTY AND INHERITANCE

61. *Is tribal or individual property in land recognized?*

61. Anyone almost may clear a piece of forest land and claim it as his own, as long as he wishes to cultivate it. When he dies it becomes, as a matter of

course, the property (if indeed it can be called property, where purchase of land is unknown) of his nearest relative. A chief is, so to speak, the lord of the soil, but he seldom interferes with his people as to where they cultivate.

There is no recognition of property in land according to our sense of the word.

62. *What are the rules of the descent of property? Does a man's property descend to his children, or to his brothers, or to the children of his sisters?*—[No reply.]

63. *Do women inherit property?*—[No reply.]

64. *Does the youngest child ever succeed in preference to the elder?*—[No reply.]

FIRE

65. *How is fire obtained? Is it lighted when required or kept always burning?*

65. When fire cannot be obtained otherwise, it is obtained from rubbing two sticks together. As a rule, fire is always kept burning.

66. *Is it solemnly extinguished on certain occasions (as after a death, during a drought, at harvest, midsummer, etc.), and a new fire made?*

66. A medicine man takes his *vipejho* (sticks with which to obtain fire) with him when he goes to visit his patient. When he arrives at patient's house he causes all the fires to be put out, and the embers thrown out at the west end of the house, whereupon he lights his own fire.

All the fires in the district are put out when a rain-doctor comes to exercise his magical powers over the elements; also when the medicine man comes to charm away wild beasts or infectious diseases.

67. *Have they any superstitions regarding fire? Any story of its origin?*

67. "Long ago there was no fire upon the earth; so a man went up into the sky to look for fire. When he got to the first heaven he met a number of individuals who were only half men (i.e., having only one side) whereupon he commenced to laugh, and they asked him whether he was laughing at their deformity, and he replied in the affirmative, saying that there were no such people in his country. He then ascended higher until he reached the second heaven, where he saw men walking on their heads. They, too, asked him whether he was laughing at them; and he replied in the affirmative. Not yet having found fire, he ascended still higher, until he got to the third heaven, when he saw men going on their knees; and they also asked him if he was laughing at their deformity, and he replied as he did before in the affirmative. In reply to his inquiries about fire they told him that he had almost arrived at his destination; and they told him to go straight on until he came to God's house, where he would find God himself standing outside, as that was the place where he was always to be found. He pursued his course as directed, and was not long before he reached the abode of *Mulungu* (God), which was situated in the fourth heaven. Everywhere the sight was ravishing. The man approached near and saluted *Mulungu*. The salutation being over *Mulungu* asked him what had brought him there. He replied saying he had come in search

of fire, as in his country there was no fire. *Mulungu* showed him a room in which to sleep and told him that on the morrow he would find fire. Next morning *Mulungu* came and called him and showed him a room, in which the most beautiful vessels were placed, all of which had covers; but besides the very beautiful vessels there were two other very inferior vessels placed by themselves. *Mulungu* gave the man leave to choose whatever vessel he liked, and then left him. He chose a very beautiful pot and went outside, where he met *Mulungu*, who told him to remove the cover. Having done so he found ashes and charcoal in the pot. Whereupon he asked, 'Lord, have you no fire?' *Mulungu* replied saying, 'How was it that on the journey here you laughed at my children? is there nothing lacking in your country, and if so what has brought you here?' Thereupon he ordered him to return to his home.

"A second and a third man went who had the same experience. At last a woman went; and when she got to the first heaven, the one-sided people came to greet her, and she sang and they danced; and when she was tired of singing, the strange beings showed her the way without asking her any questions. When she got to the second and third heavens she also sang and the inhabitants danced; and when they asked her whether people in her country had deformities, she said many were afflicted in that way, and she went on to tell them that some walked on their ears, others on their toes, and others again were blind. When she had rested she resumed her journey, and ere long she arrived at the house of *Mulungu*. He (*Mulungu*) asked her her business, and when she had told her errand he showed her a room in which to sleep the night. The next morning he called her and showed her the lovely vessels which he had previously shown to the three men and told her to choose one; but she shrank from doing so, fearing to touch such lovely vessels. Glancing, however, in the direction of the two inferior pots she summoned up courage to take one of them. Having chosen a pot she went outside and saw *Mulungu*, who told her to uncover the pot; and when she had done so, lo! there was the long-looked-for fire inside! *Mulungu* praised her for the way in which she behaved toward his children on her way thither; and he presented her with an ox in recognition of her kindness. Here she remained two days feasting on the meat, and on the third day *Mulungu* told her she might go and take the fire with her, which would be sufficient for all the world. It was a day of great rejoicing when the woman returned to the earth. Multitudes came to hear the news and to procure fire from the pot. The men with one accord applauded the woman, and declared that the women have more sense than the men."

FOOD.

68. *Do they eat everything?—No. Or are certain foods forbidden?—Yes.*

Are some foods forbidden—(a) to everyone without distinction?

(a) The Wagogo don't eat fish, crabs or zebra. These, however, are not forbidden, but considered unfit for food;

(b) *to members of particular tribes, clans, or castes?*

All the members of a *clan* have the same *muziro* (forbidden thing).

(c) *to women but not to men, or vice versa?*

Each *family* has its *mulongo* (forbidden thing) which is transmitted from the father to his children. The wife may have a different *mulongo* to that of her husband, but her children do not inherit it.

(d) *on certain occasions, as after a death, during pregnancy, war-time, hunting, fishing, harvest, etc.?*

Illness. The medicine-men forbid certain kinds of food in case of illness, etc. In war-time men and women keep from cohabiting; and when on the war path they won't scatter the fire in camp, but gather up the burning embers together. The same is observed in hunting.

Planting. They don't winnow or eat any of the seed in the garden whilst sowing. The seed which is over in the evening is brought home and mixed with a fresh lot for the next day's sowing.

Reaping. They make a fire at the threshing-floor by means of rubbing two sticks together, and never wear shoes whilst threshing.

(e) *at certain periods of life (childhood, puberty, adult years, etc.)? What are the foods thus forbidden?*

(1) *Childhood.* Liver, kidneys, heart, cat's bit and part of the stomach.

(2) *Puberty; (before marriage).* Guts of animal.

„ *(after marriage).* Father's *mulongo*.

What reasons do they give for the prohibitions?

Reasons.—The liver, etc., is considered to bring illness; the guts to retard marriage or to make an entanglement of the marriage contract; to eat the father's *mulongo* involves the loss of hair and teeth. The eating of the *muziro* (p. 305) is said to cause the skin to fall off.

69. *Do men and women eat together? And if not, why not?*

69. Some (not many) men and women eat together, but in most cases the father and sons eat first, the mother and daughters eating what is left. In other cases still, the food is divided and they eat apart at the same time. The reason assigned is precedence.

70. *Do children eat with grown-up people?—Some do.*

71. *Does each person eat apart? And if so, why?—Not as a rule.*

72. *Is cannibalism practised? Do they eat their enemies or their friends?—No.*

73. *What reasons do they give for the practice?—None.*

74. *Are there any special ceremonies at cannibal feasts? Are special vessels or implements used at such feasts?—No.*

75. *Is the use of human flesh confined to any class or sex?—No.*

76. *What is done with the bones of persons who have been eaten?*—[No reply.]

77. *Do they ever drink the blood of men or animals? Or do they specially avoid the blood?*—Yes, blood of cattle.

78. *Are there occasions when they avoid even the sight of blood? Eg., are men prohibited at times to see the blood of women, or women to see the blood of men?*—Nil.

79. *Do they ever fast? On what occasions, and why?*—Nil.

80. *Do they think that by eating the flesh of certain animals or persons they acquire the qualities of the animal or person eaten? Eg. that by eating the heart of a lion or of a brave man they become brave; by eating the heart of a hare or a deer they become timid, etc.?*

80. Yes. If a man kills a lion or brave man he eats his heart in order to become brave. To eat the heart of a hen is said to make one timid.

HUNTING AND FISHING.

81. *What customs and superstitions have they in connection with hunting and fishing?*

81. (a) Hunters eat heart, kidneys, breast, guts, and stomach of animal, but no other part.

(b) Some don't cover the pot in which the above are cooked; others cover, but the wives must watch to see that the pots don't boil over.

(c) Wrong to touch a woman whilst hunting, also wrong for a woman to misbehave whilst her husband is so employed. It sometimes happens that, when hunters are unsuccessful, they attribute their want of success to the misconduct of their wives during their absence.

82. *Do the hunters and fishers prepare themselves for hunting and fishing by any observances or ceremonies? Do they observe any special rules as to eating, speaking, silence, etc., during hunting and fishing? Do they scarify themselves, and why?*

82. (a) They consult medicine-men before going to hunt.

(b) Medicine-man takes pieces of bark and cooks them in forest.

(c) Medicine-man makes scars in wrists of hunter, in which he injects medicine.

(d) Medicine-man utters prayers and incantations.

(e) Hunter and wife have their heads shaved.

(f) Wife hands gun to husband when starting in pursuit of game.

(g) Whilst away hunting, the hunter sleeps at night with his face downwards.

83. *Do the women and children left at home observe any special rules while the men are out hunting and fishing?*

83. Whilst the husband is away hunting, the wife must not allow anyone to pass behind her, or to stand in front of her whilst sitting. She must lie on her face in bed.

84. *Do the hunters and fishers observe any special ceremonies on returning from the chase and from fishing?—No.*

If a hunter has been attacked by a lion, and he attributes it to his wife's misconduct, he returns to her in great wrath.

85. *Are any ceremonies observed for the purpose of appeasing the spirits of the animals and fish which have been killed? What do they do with the bones?*

85. No. They throw away the bones.

AGRICULTURE.

86. *Do they till the ground?—Yes.*

What customs and superstitions have they in reference to agriculture?

All fires are put out, and the medicine-man procures fire with *vipejeho* (cf. 66 above). Some of his medicine he puts in the fire, and the rest in some of the corn intended for sowing. This is then mixed with all the seed corn. The medicine-man also directs that a basket of corn, which has been mixed with the medicine, be placed in the centre of each field, from which a small quantity is to be taken at a time and sown, the sowing commencing at the border of the field.

87. *Have they ceremonies at sowing, ploughing, and harvest?*

87. The chief leads the way in sowing.

88. *Have they special rules as to eating the new corn and fruits, and as to the fire used to cook them?*

88. Amongst the Wetumba the chief is the first to taste of the new crop. If a man's corn is ripe before that of the chief, he takes some of his corn to the chief to taste, so that he may give him leave to do the same.

89. *Do they sacrifice to obtain good crops? Or to save the crops from blight, hail, etc.?*

89. Yes. In addition some have special medicine, which they carry about with them, or keep in their houses. The animal or fowl offered up as sacrifice must be black, and the sacrifice takes place at the grave of a deceased relative. Small pieces of the flesh are thrown toward the four quarters of the globe, also toward heaven and on the ground—thus seeking to appease the spirits in all parts. The main part of the carcase is eaten, whilst the bones are left at the grave. They address the spirits, entreating them to eat the meat offered to them. The piece thrown on the ground is intended for the relative buried there. If the meat has disappeared the following morning, they say that the *milungu* (gods) have taken it and so are well pleased with the offering; but should it be still there the following morning, they think that the *milungu* are not satisfied, and so they sacrifice again and again until the piece of meat left at the grave is taken. No matter what takes the meat, the act is attributed to the *milungu*.

90. *Have they ceremonies for keeping vermin (mice, caterpillars, birds, etc) from the crops?*

90. They catch one of the birds which trouble the gardens, and drench it with medicine, when they release it, hoping that it may entice all its companions away to the forest. The medicine-man puts some of the medicine in the opening of a baobab tree.

Insects called *mawuda* are very destructive to the crops. These they attempt to drive away in the following way. A lot of the *mawuda* are caught, and the youngest child of the owner of the garden, or an elderly woman, burns them at a cross-road in a 'gracehot'.

In order to banish *mbiluzi* (caterpillars), the medicine-man burns medicine in the garden infested by them, and calls the birds from the four corners of the earth to come and eat the *mbiluzi*.

91. *Have they any superstitions about the first corn cut or the last corn cut?*

91. When the chief has given leave for the new crop to be eaten, then the father of each family may eat, and then the wives and children. Children are afraid to eat before the fathers have tasted the new crop, fearing their stomachs should swell.

92. *Is any portion of the crop preserved with special ceremonies till the next sowing or the next harvest? What reasons do they give for these customs?*

92. No. But all take gifts of corn to the chief for having brought the medicine-man to invoke a blessing on their crops.

93. *Are there any ceremonies practised on the harvest field, such as wrapping up persons in the sheafs, rolling on the ground, etc.?*—No.

94. *Are there any ceremonies or superstitions about threshing, winnowing, etc.?*—No.

95. *Are persons engaged in agricultural operations (as sowing, reaping, threshing, gathering the fruits, making oil, etc.), regarded as sacred or tabooed in any way? Have they to observe any special rules during the operations?*—No.

96. *Mention any superstitious uses of agricultural instruments, as the plough, winnowing basket, sieve, pestle for pounding corn or rice, etc.*

96. (a) To sit on mortar or pestle; illness in loins is supposed to be the result.

(b) When one person is carrying a sieve, and has to pass another sitting down, he is obliged to pass in front of him.

WAR.

97. *What ceremonies are observed before going to war?*

97. (a) Drink medicine. (b) Wear medicine. (c) Have blessing of medicine-man.

98. *Have the warriors on the war-path to observe any special rules as to diet, sleeping, scratching themselves, wetting their feet, touching their heads, etc.?*

98. Warriors may not touch one another's heads. If they meet with one of the enemy *en route* they must not put him to death, but take him with them to show them the way. At the camping places they use medicine to keep away wild beasts, etc.

99. *Are the persons left at home bound to observe any special rules as to diet, sleeping, etc., while the warriors are out on the war-path?*

99. (a) Women are not to transgress with men. (b) It is not right to stand at the door of a warrior who is away fighting.

100. *Do they mutilate their slain enemies? And how, and with what object?*

100. They cut out and carry away the private parts, which they cook and eat with medicine, in order to take away the *maulwa* from the enemy.

101. *What ceremonies are observed on the return of the war party?*

101. If successful they return with shoutings of joy, and the wives go out to meet them dancing and shouting, and taking off their clothes and putting them on their husbands' heads or shoulders. The rejoicings are wound up with a feast.

102. *Is a man who has slain an enemy obliged to perform certain ceremonies or to observe any special regimen before he may associate with his fellows? In particular, are there special rules affecting his eating, drinking, costume, and the vessels and implements which he uses?*

102. The father gives his son who has slain an enemy a goat "to clean his sword." He also procures medicine for him to make him fierce. The vessels which he uses on the day of his return, have pieces broken out of them at the mouth.

GOVERNMENT.

103. *Have they any form of government?—Yes (German).*

Are there chiefs? And what is their power?

103. Yes: chiefs appointed by the Germans, and chiefs appointed by the people; in some places, however, they have only the former. The chief power of the chiefs is derived from their art of rain-making: if a chief is not a rain-maker himself it devolves upon him to procure rain from him who is skilled in the art. The chiefs also derive some power from being the adjudicators of petty lawsuits.

104. *Is the chieftainship elective or hereditary? If hereditary, does it descend to the chief's children, or to his brothers, or to his sister's children, or to whom?*

104. It is hereditary; and goes to the chief's children. If there are none, it goes to brothers. Amongst the Wetumba or Wasagura the nephew of the chief succeeds to the chieftainship; and if there is no nephew the chief's sister succeeds him.

OATHS AND ORDEALS.

105. *Have they any ceremonies at the making of friendships, covenants, peace, alliances, etc.?*

105. Each one gives his fellow two goats, one for himself and one for his wife. These are styled *milejehe* ("ropes" with which to bind the contracting parties). After some time, each gives the other a cow, when the bond of friendship is sealed. The Wetumba make blood-brotherhood.

106. *Have they any special forms of oaths or judicial ordeals?*

106. No. But they swear by their relatives in confirmation or denial of a thing. Putting the hands in boiling water is the ordeal for witchcraft; for minor offences, the ears are pierced with a needle. When the needle refuses to go through the lobe of the ear, the accused is considered guilty; and when the hands of the accused get skinned through putting them in the boiling water, he is pronounced guilty.

SALUTATIONS.

107. *What are their forms of salutation?*

107. Morning (before 9 o'clock).

(1) *Mbukwa!* (Good morning!) Pl. *Mbukweni*.

Reply.—*Mbukwa* (Pl. form not used in replying).

(2) *Zagono?* (How have you slept?)

Reply.—*Awu zagono gwegice?* (Very well, how have you slept?)

After 9 o'clock.

(1) *Mihanya!* Pl. *Mihanyeni!* (Good-day.)

Reply.—*Misā*.

(2) *Za wuso?* (How have you been to-day?)

Reply.—*Awu za wuso gwegice?* (Very well, how have you been?)—
or—*Awu za wuswero gwegice?*

The first time of meeting during the day, however late the hour, "*Mbukwa*," is the salutation, which would then appear to mean, "How do you do?"

Salutations of Respect.

(1) *Lamuceni* or *Mbukweni*.

Reply.—*Mbukwa*.

(2) *Zu wanzuko wenyu?* (How do you do?)

Reply.—*Yaye, awu ta zu wanzuko menye*. (Yes, I am very well, thank you.)

N.B.—In addressing an elderly person or a person of rank, the plural form of salutation is used.

ARITHMETIC.

108. *Up to what number can they count?*

108. 1,000, which they call *mayana ikumi* (i.e., hundreds ten = ten hundred.)

109. *Do they count on fingers and toes, and in a particular order, beginning with a particular finger?*

109. They count on fingers and toes, beginning with little finger of right hand (as a rule), and going to little finger of left hand.

110. *Do they use pebbles, sticks, etc., in counting?*—They use sticks.

111. *Do any of their numerals show that they are borrowed from the custom of counting on fingers and toes? E.g. does "hand" stand for five? "hands and feet" or "man" for twenty?*

111. Closed hand stands for "five"; and both hands closed, "for ten."
 112. *Is any particular number also used in the indefinite sense of "many"?*
 112. Yes. *Magana caka.*

WRITING.

113. *Do they send messages, or make records, by any methods like writing, as by notching sticks, carving or painting figures on wood or stone, tying knots in a string, etc.?*

113. When a man's wife becomes pregnant, the husband gets a string and makes nine knots in it, and when each new moon appears he unties one of the knots. Some measure the lunar month by means of thirty sticks, which they shift, one by one, each day. When making an appointment with anyone a string with knots is used.

MEASUREMENT OF TIME.

114. *How do they measure time?*—By means of sun, moon, and stars.

115. *How do they tell the time of day?*—They go by the sun.

116. *Do they reckon by days or by nights?*

116. By nights principally. Sometimes they differentiate and say, "day and night," meaning a whole day of twenty-four hours. They also occasionally speak of having done work so many days, meaning the daytime.

117. *Do they reckon by phases of the moon?*—Yea.

118. *How do they determine the year?* By seasons? By the growth or ripening of certain plants or fruits? By the number of the moons? By the constellations which rise just before sunrise, or which set just after sunset? By the position of the sun's rising or setting at different times of the year, as indicated by natural landmarks?

118. (a) By seasons. (b) By blossoming of trees. (c) By constellations. (d) Principally by the position of the sun's rising and setting.

119. *Have they names for the months, and what do these names mean?*

119. Yes.

(1) *Mosi* = First (our December).

(2) *Mhiri* = General (i.e., rain everywhere).

(3) *Mhalungulu* = Cessation (i.e., first rains over).

(4) *Munye* = Possessing (i.e., enjoying first-fruits).

(5) *Mwezi we litika* = The month of plenty.

(6) *Mwezi we lisololela* = The month of beginning to reap.

(7) *Mwezi we nhicanga* = The month of threshing.

(8) *Mwezi we taga matoto* = The month when the harvest is finished.

(9) *Mwezi we tutula* = The month of forest clearing.

(10) *Mwezi we ndarwa mbereje* = The month of digging up the stubbles.

(11) *Musisimuka* = Budding.

(12) *Muchilanhungo*¹ = Partial (i.e., partial rains, not general.)

¹ [Mr. Cole writes *Mucilanhungo*, but notes that "Gi=chi (soft) in English."]

120. *If they recognize both the lunar and solar year, how do they harmonize them?*—They recognize the solar year only.

121. *Have they observed the solstices and equinoxes, and if so, how?*—No.

122. *When does their year begin?*—About 1st December.

122. *Have they any ceremonies at the end of the old year and the beginning of the new one?*—No.

123. *Have they any artificial time-keepers in the nature of sun-dials, water-clocks, pillars for determining the length of the sun's shadow at different times of the year, etc.?*—No.

GAMES, DANCES.

124. *What games and amusements have they?*

124. Smoking, dancing, draughts, hockey, top-spinning, touch-and-go, bull-in-the-ring, hawk v. hen-and-chickens, scratch cradle [? cat's cradle.—Ed.], guitar- and banjo-playing, dulcimer-strumming, flute-piping, bird-snaring, and gossiping.

125. *Describe their dances.* (a) *Are any of their dances imitations of animals?* (b) *What is the object of such dances?* (c) *Are their dances ever of the nature of a religious rite?*

125. (1) *Sayigica*. This dance is characterized by hopping twice on each leg alternately to the accompaniment of a chant and the clapping of hands. The women at first face the men at some distance, and then come and meet them, when they return in front of the men.

(2) *Nzenjerera*. Hopping on one leg (principally the right), but change to the other. This is also gone through to the accompaniment of a chant.

(3) This is a dance in which the women trot up to the men, who follow them back to their place, when the men return to their place. This is repeated *ad infin.* until the dance is over. This also has a chant accompaniment.

(4) *Singo*. The women work their necks backwards and forwards, whilst man jumps and strikes two sticks together. The women choose partners, who place their hands on their shoulders. The company of dancers is encircled with a ring of males. A precentor leads the chanting.

(a) None in imitation of animals. (b) Amusement, love-making, and a cloak for immorality. (c) They dance at the graves of their ancestors, when they are sacrificing for rain.

MAGIC AND DIVINATION.

126. *Do they practise magic and witchcraft? Describe the methods employed.*

126. Yes. The magician (*muganga*) takes his *mawizi* (i.e., three sticks on which little bells are tied) and rattles them, whilst he asks the man who has come to consult him, what has brought him. The magician names everything he can think of, the visitor keeping silent until the right thing is mentioned. If he fails in mentioning the thing which has brought his client, the magician gives up the case;

but if he is successful, he puts by his *marizi*, and the visitor explains his case. The magician again rattles his *marizi* whilst he tells the man that the patient about whom he has come will recover if he has an emetic, which will eject the poison from his stomach which his enemy put in his food. He further says that he knows the person who has poisoned him. The visitor says, "*Cisangu*" (Thank you), and the magician replies, "*Ca muganga*" (All right).

Some time ago a woman after childbirth had pains in her stomach, and her friends went to the medicine-man to find out what was wrong with her, and after asking them several questions about the woman, he said when the moon got to a certain point in the heavens she would have a child. His clients laughed, and said that the woman recently gave birth to a child. Whereupon he replied saying that they were *too young* to consult him.

127. *Are there professional magicians, sorcerers, doctors, medicine men, or witches among them? Do they inflict and cure disease, bewitch enemies, etc.? Describe their modes of operation.*

127. There are professional magicians and doctors; but witches don't make themselves known. The work of a *muganga* or magician is described above (cf. 126).

A doctor procures his medicines from roots of trees, leaves, plants, etc. These he cooks, and either makes into poultices or decoctions, and administers them to his patients. He prescribes a regimen, and some kinds of foods he strictly forbids. He sometimes tells his patient not to cut his hair until he is well, when he (the *muganga*) will come and give him another kind of medicine, after which he may have his hair cut. He also gives the patient charms to wear.

Witches place medicine on paths where their enemies pass. But probably the only way in which they inflict injury or death is by putting poison in one's food.

Hyenas, snakes, ravens, and owls are supposed to be the friends of those who practise witchcraft. A man won't kill any of these publicly.

128. *How does a man become a sorcerer, doctor, or medicine man?*

128. These arts are principally transmitted from father to son; or others are shown by the *mitungu* (gods) in their dreams that they ought to be medicine-men, when they go off to the forest, leaving their wives, perhaps in bed, at night, in search of the medicines revealed to them by the gods. They remain several days in the forest. When they return they are doctored in order to prevent them from being taken away again to the forest by the gods.

129. *Are there rain-makers? How do they procure or avert rain, hail, thunder and lightning?*

129. Yes. The art itself of rain-making is kept a secret, but there are offerings of black fowls, black sheep, and black cattle at the graves of dead ancestors. A rain-maker wears black clothes during the rainy season.

It is said that a man who is at enmity with the people of a certain district goes to a *mukoma-mvula* (rain-killer) requesting him to keep away the rain from that district. The rain-killer takes a black snake, to which he has given medicine,

to the part from which he wants to keep away the rain, and lets it loose. The people of the place from which the rain has departed seek the advice of a magician, who tells them that it is a snake which is averting the rain. A *muhimbu* (a professional finder) is called, and he and the people of the district go in search of it, and, if successful in the hunt, the magician takes the medicine from its mouth, and the people offer a sacrifice of a black sheep, when the spell is broken, and the much-needed rain comes.

Or the *mukoma-mvula* may take large pegs in which he makes holes to put medicine in. When this part of his business is done, he takes the pegs to a large tree in the obnoxious district, into which he drives them or hides them in the ground close by. He then scarifies the forehead of the man, into which he rubs medicine.

In order to find out the *mukoma-mvula*; the *pugula lugumba* (the casting of lots) is resorted to. When the culprit is found, he is tied up until it rains; but if does not rain he is put to death.

Now that the country is under German protection, the natives have not the power of putting anyone to death. Were it not for this, many a poor wretch during the past few months [1901-2] would have been put to death owing to the failure of the rains.

130. *Do the sorcerers or medicine men ever dress as women?*—No.

131. *Do the sorcerers or the people generally draw omens from living animals, birds, the entrails of animals, voices, etc.?*

131. Yes.

(a) They draw an omen from the way in which a bird called *Ng'hong'onha* sings as a man is on his journey.

(b) To meet one person when starting on a journey is counted unlucky.

(c) To meet two persons when starting is reckoned lucky.

(d) To knock the right foot against anything when on a journey is a good omen.

(e) To knock the left foot is a bad omen.

(f) To meet a black snake on a journey is counted a bad sign.

(g) There is a bird called *nyaciko* [*nyachiko*], which, if it flutters in the air and lets its feet hang, and makes a shrieking noise, denotes an attack.

(h) There is another bird named *Nyanda*, which if it flies round and round a house, is a sign of strangers coming.

(i) If an animal runs across the path from left to right in front of one, it is a bad sign, and *vice versa*, a good sign.

132. *Have they any other modes of divination, as by the use of lots or dice?*

132. *Matega*. A man who is about to take a journey sticks an arrow in the ground and puts a pot on top of it; to which he speaks; and if the pot falls whilst he is speaking, the projected journey is considered unpropitious. But if it remains on until he has finished, the reverse is the case.

Illness.—In a case of illness the medicine-man asks the *itega* (singular of *matega*) whether the patient is afflicted by God or man; and if the former, the pot remains; but if the latter, it falls.

Journey.—When about to take a journey, one takes two castor oil seeds, and two pieces of stick, and flour, to a spot which he has swept near his house. Here he sprinkles the flour on the swept ground, and places the sticks and seeds close together on the flour. In the morning, when he comes to look at the *matega*, if he find everything as he left it the day before, he looks upon his projected journey as propitious; but if the things are scattered, *vice versa*.

RELIGIOUS AND POLITICAL ASSOCIATIONS.

133. *Have they any associations for religious or political purposes? Describe the object of these associations, the mode of admission to them, the ceremonies performed by them, the privileges enjoyed by their members, the badges of membership, etc.*—No.

MEN AS WOMEN, WOMEN AS MEN.

134. *Besides the case referred to above (No. 130), are there any other occasions on which men dress as women, and women as men, as at childbirth, marriage, and mourning? Are boys ever dressed as girls, and girls as boys?*—No.

135. *What reasons do they give for such exchanges of dress?*—[No reply.]

SLEEP FORBIDDEN.

136. *Are there any times when they are not allowed to sleep, e.g., when sick or wounded, after circumcision, after child-bed, before marriage, etc.?*—No.

CEREMONIAL UNCLEANNESS.

137. *Besides the instances already referred to (see Nos. 8, 24, 25, 55, 60, 102), are there any other cases in which persons, things, or places, are regarded as ceremonially unclean or impure? Describe the various modes of lustration or purification employed.*

137. If a man has been in chains, when released he is washed, with water in which medicine has been mixed, before he is readmitted to the society of family and friends. Also in case of small-pox, when the patient has recovered, he is purified.

DOCTRINE OF SOULS.

138. *Do they think that human beings have souls?*—Yes. *What is the nature of the soul?*—The life. *Does it resemble a shadow, a reflection, a breath, or what?*

139. *Is the soul supposed to depart from the body at death, in disease, sleep, dreams, trances, etc.?*—At death. Sleep is called a "little death."

140. *Does the soul pass out of the body by the mouth, the nostrils, or how?*
They have no idea.

141. *What is their theory of dreams? Do they believe in the reality and truth*

of what they see in dreams?—(a) Dreams result from the wandering of the brain.
(b) They believe in dreams.

142. *When a man is sick because his soul has departed from him, do his friends try to bring back his soul and restore it to his body?*—No.

143. *Do his enemies try to catch and detain the wandering soul, in order that the man, deprived of his soul, may die?*—No.

144. *Can a man's soul be extracted or stolen from his body? Can he lose it by accident?*—No.

145. *Are souls driven away by noises, beating the air with sticks, etc.? Can they be bottled up, let out at holes, etc.?*—No. But masses (evil spirits) are expelled in this way.

146. *Is the soul of a person who has just died recalled in the hope that it will return and reanimate the body?*—No.

147. (a) *What becomes of the soul after death?* (b) *Is there a spirit land where the souls of the dead gather?* (c) *Where is this spirit land?* (d) *How do the souls reach it?*

147. (a) It exists like a shadow. (b), (c), (d) [No reply].

148. *Do souls transmigrate into animals, plants, etc.? When a tribe or clan is called after, and reveres, a certain species of animals or plants (which is the "totem" of the tribe or clan, see No. 4), are the souls of the members of the tribe or clan supposed at death to transmigrate into the totem animals or plants?*

148. No definite information has been obtained as to this question, but as the Wagogo worship the puff adder, as being possessed by the *milungu*, one concludes that they believe in transmigration to some extent.

149. *Are animals, trees, and plants supposed to have souls? Are they ever treated like human beings, spoken to as intelligent creatures, dressed in human dress, married to men and women, etc.?*—No.

150. *Are animals and plants thought to possess language of their own? Are any persons supposed to understand the animal or plant language? How do they acquire such knowledge?*

150. Animals are supposed to have a language of their own. Human beings do not understand their language.

151. *Are inanimate things, such as weapons, clothes, food, etc., supposed to have souls which are separable from the things, and exist after the things are destroyed?*—No.

152. *Are the souls of the dead worshipped with prayer, offerings, etc.?*—Yes.

DEMONS AND SPIRITS.

153. *Do they believe in demons and spirits, such as spirits of rivers, lakes, the sea, mountains, winds, clouds, trees, corn, rice, etc.?*—Yes.

154. *Do they pray or sacrifice to these spirits?*—Yes.

155. *Are the demons or spirits ever driven away from the house, camp, or village? Is there a periodical (e.g., annual) expulsion of demons or spirits?—No.*

SCAPEGOATS.

156. *Do they ever employ anything like a scapegoat? i.e., do they load any person, animal, or thing with the disease, misfortunes, and sins of an individual, village, or tribe, and then kill, expel, throw away, or turn adrift the person, animal, or thing so laden, in the hope that the disease, misfortune, or sin will thus be carried away?—No.*

157. *Do they on certain occasions solemnly kill animals which at other times are sacred and inviolate, e.g., the totem animals? What are these occasions? What ceremonies are observed in killing them? What is done with the skin, flesh, blood, and bones of the animal thus killed? Is it, or any portion of it, eaten by the worshippers? What reasons do they give for these customs?—No.*

GUARDIAN SPIRITS.

158. *Does each man believe that he has a guardian spirit?—Yes.*

159. *Do they think that their life or fortune is bound up with some special object (e.g. an animal, plant, tree, stone, etc.), and that if this object is killed, lost, or destroyed they will die?*

159. The life of the child is bound up with a charm which is procured by its father at birth.

160. *Are such patron-objects acquired at birth, puberty, or when? What ceremonies are observed in choosing them?*

160. The charm, which is put on a child at birth by its father, is only worn until the child is a few years old, when the father provides it with another. There are no ceremonies observed.

161. *How does the man treat his patron-object in ordinary life, and on special occasions, as in sickness, danger, at marriage, etc.?—[No reply.]*

162. *When the patron-object is an animal, does the man ever dress in the skin, etc., of an animal of that species?—[No reply.]*

RESURRECTION.

163. *Do they believe in any form of resurrection? Under what conditions is it supposed that a dead body may be resuscitated?*

163. No. But they believe in a disembodied state.

THE HEAVENLY BODIES, ETC.

164. *Do they worship or show respect to the sun, moon, and stars? Have they any ceremonies at the new moon, sunrise, sunset, the solstices, equinoxes, etc.?*

164. When the new moon appears, they fire off guns, blow horns, beat drums; and they stick a horn in the ground, over which they sprinkle flour. They also

make a hole in the ground into which they put a sheep's head and medicine, and cover them over with a stone. The sheep's skull and medicine are left in the hole, but flour is sprinkled around the hole every month when the moon appears. Some people, as soon as they see the new moon, break a piece of stick and spit on the pieces and throw them in the direction of the moon, saying, "*Vikunguzuce vidome macezi ku wuswero ice kizuwa*" ("Let all illness go to the west where the sun sets"). Others throw ashes in the air in the direction of the moon. They do not worship any of the heavenly bodies.

165. *Have they any myths about the sky, earth, sun, moon and stars?*—[No reply.]

166. *What do they think becomes of the sun at night?*

166. They have no theory as to what becomes of the sun at night; but they think that the sun always remains in the east, and that the great orb of day which is seen daily travelling from east to west is only the reflection of the sun.

167. *How do they explain the phases of the moon? Also eclipses, thunder, lightning, rainbows, rain, wind, and earthquakes?*

167. They wonder why human beings don't come to life again like the moon.

Eclipses.—When the sun becomes red, they say that it is a sign of war and the death of a chief; but they make no guess at the cause of the change in the sun's appearance. When there is an eclipse of the moon, they turn out, beating drums, tin cans, etc., thinking if they don't do so the moon will fall. An eclipse of the moon, they say, is caused by a battle between the sun and moon in which the moon became defeated.

Thunder.—Battling of rain in the heavens.

Lightning.—Caused by rain.

Rain.—For their legend of the origin of rain see below.

Wind.—Comes from sea and rivers and openings in the earth, which they call *ng'hutu ya'si*.

Earthquakes.—They have no theory, but think that an earthquake is the sign of good crops.

168. *Have they any myths about animals, plants, the sea, rivers, mountains, clouds, origin of death, etc.?*—Yes.

169. *Give as many of their fables, nursery tales, and traditions as you can.*

169. They think that all living creatures (including man) came at first out of an ant hole.

TALE OF THE FROGS AND THE RAIN.

Long ago there was no rain, and all the beasts, reptiles, and birds of the forest came together to see how they could get rain. The big game suggested that, as they had come together, they had better cry aloud for rain. Whereupon they separated into herds according to the different kinds. The elephants led the way trumpeting with all their might, then came the rhinoceroses, and after them the

giraffes, and so on to the smallest kind, without moving the elements. They now called upon the frogs to try their voices, and in obedience to their request, the frogs croaked and croaked again, until at last the clouds gathered in the heavens, when the frogs called upon the beasts of the forest to dig large holes for receiving the rain. When they had finished, the rain fell in large quantities upon the earth, and formed lakes and pools. Now the frogs told the beasts that, as it had rained, there would be plenty of grass for them, and they had better go and graze and return to the lakes when they became thirsty, but as for themselves, being chiefs, they would remain in the lakes and eat mud, etc. Therefore frogs are found in lakes and pools up to the present day; and when the natives hear them croaking, they say that they are not making a noise in vain, but that rain is near.

THE HYENA AND THE HARE.

"A hare and a hyena made friends; and when they had done so, they agreed to go together to a certain place to find wives. When they arrived at the place where females were, they said, 'Let us *panga* here (*panga* is to remain in the porch of a lover's house without eating, until the father of the girl gives the suitor a reply, which may not be for days) until we get wives.' The hare had food with him, but the hyena had none. The hare tightened the string of his fiddle and tied a grasshopper to one of the strings, saying, 'We shall now see who is not able to bear hunger. I shall keep playing my fiddle.'

"As night drew on, they had food brought to them, but they refused it, whereupon it was taken back. After a time the hare commenced to eat the food which he had brought, but his companion did not see him eating. They indulged in a chat with their sweethearts until they got tired, when the girls retired to their bedroom. The guests spread out their sleeping skins and lay down to rest. The hare, however, recommenced fiddling, and the hyena said within himself that when his companion got tired of playing on his instrument, and he and all in the house were asleep, he (the hyena) would steal a goat from the courtyard. But lo! and behold! it was the grasshopper which was playing on the instrument, the hare being fast asleep. This deceived the hyena, and he dozed and woke, dozed and woke until the morning light. The hare took off the grasshopper from the string of his fiddle until the following night, when he tied it on again, and thus night after night kept his fiddle going, and so deceived his companion, who thought he kept awake all the time. The hare kept on secretly eating the supply of food he had brought with him, but the hyena, not having any food, had to give in, and called out to the hare, saying, 'How is it you don't sleep?' And on receiving no reply he went to the herd of his projected father-in-law and killed a fine goat and demolished it, save the stomach, which he put under a mortar turned upside down. When it was day he sat on the mortar; and when the people of the house were turning their herd out to graze, they found a goat missing. Whereupon they asked those who had herded them the previous day, how it was that a goat was missing. They replied, saying that they brought all the herd home safely the previous evening, and that

when they had counted the goats in the pen they were all there, and asked in astonishment, 'Where can the one have gone?' Upon this the girls' brothers asked the hyena, 'Friend, how is it that you are so full? when did you get food?' The hyena replied, 'What do you think I have eaten? where should I get food?' At this point the herdsmen saw traces of blood, and they went to tell their parents, who sent their two daughters, the sweethearts of the hare and hyena, to fetch the mortar. When they turned the mouth upwards they saw the stomach, and asked where it had come from. Suspecting that it was the work of the hyena, they charged him with having killed the goat, and the accused could say nothing in reply. Whereupon the hyena and hare were made prisoners. The hare, having said that his father cultivated bananas, was tied with strings obtained from fibre of the banana tree; and the hyena, having said that his father was a rich man, was tied with thongs of cow-leather. When the banana fibre got dry the hare broke loose and made his escape; but his companion was put into a big cooking pot, full of water, and put on the fire. But the people of the house, fearing he should escape from the pot, took him out and despatched him without delay."

THE ORIGIN OF DEATH.

"A man and a hyena had a dialogue, when the man said, 'We want to live always.' The hyena said, 'You had better not, as we want to eat your dead bodies.' Therefore we die, as decreed or desired by the hyena." [Cf. No. 49, above.]

A HARE AND CHAMELEON.

"A hare met a chameleon walking slowly, whereupon he asked him to run a race. The chameleon agreed, saying that he would be able to beat the hare, and so would give him odds. Accordingly the chameleon stood behind the hare when starting, but he cleverly managed to climb on to the hare's tail without his noticing it. The hare ran hither and thither with all his might with his companion, seated on his tail. On getting tired he went to sit down, but when in the act of doing so, the chameleon said, 'You will sit on me!' The hare was startled with this speech, not dreaming that the chameleon was near; and he turned quickly round to see whether his ears did not deceive him. But sure enough there was the chameleon on the ground, the clever rascal having slipped off the hare's tail. Whereupon they had a dispute about the result of the race, the chameleon contending strongly that he had won it. In order to end the dispute they set to race again, when the chameleon got on to the hare's tail as before, whilst the hare ran with his usual speed. When he got tired and wanted to sit down, the chameleon again reminded him that he would sit upon him! On looking round the hare saw that the chameleon was really there, and asked him how it was that he had outrun him. The chameleon replied, saying that he had beaten him fairly in running. Whereupon they set out the third time, when the experience of the two former races was repeated. Now the hare said that he could not understand how the

chameleon had outrun him, and with much shame-facedness he had to own himself beaten."

N.B.—This is the only instance in which one has heard of the hare being outwitted.

A MAN, A LION, AND A FROG.

"A man went to hunt with his two dogs, and whilst he was away hunting there came a great downpour of rain, and he ran for shelter into a cave. When the rain was nearly over, a lion came and found the man in his cave. Having saluted the man, the lion told him to eat his dogs, and then he would eat him. The man refused saying, "You had better eat the dogs yourself and leave me alone." But the lion said, "No, but let you eat the dogs when I shall eat you." But the man again sternly refused. The lion also refused. They went on like this for a long time, the one wanting the other to eat the dogs, and each in turn refusing, until at last a frog came upon the scene and saluted the man and the lion, and asked them what they were talking about. The man said that he had come to the cave for shelter, and that the lion afterwards came and found him there; and that he wanted him to eat the dogs, whereupon he, the lion, would eat him. Whereupon the frog said, "And do you refuse to eat the dogs?" "I certainly do," replied the man. The frog now rejoined, saying that he (the man) had better eat the dogs and allow himself to be eaten by the lion, as he, the frog, would then eat the lion. The lion hearing this and seeing the frog's mouth constantly opening and shutting, took fright and scampered away.

"When the lion had run away the frog reminded the man of the kindly act he had done him, and said he had better pay him. The man said he would give him a cow; but the frog refused, and the man said he would give him an elephant; but this he also refused. Whereupon the man said, "Since you have refused everything, what am I to give you?" The frog replied, saying, "Dear friend, I don't want your cows, nor your elephants; but if you know where there is a lake which never goes dry, take me there and I shall be satisfied." The man consented to this, and took the frog to the lake. When the frog was taken to the lake, he jumped in and said he would make it his home. Hence frogs live in water and refuse to change their quarters for the dry land." [Compare the tale on p. 331.]

A LION AND A BADGER.

"A lion and badger made friends. The lion said, "I shall catch animals for us to eat," and the badger said, "I shall find honey on which to feast ourselves." The lion went and killed game, and called his friend to have a feast. The badger afterwards found honey, whereupon he called the lion to share it with him. This mutual friendship and hospitality went on for a long time, until a hare came and made his lair midway between the residences of the two friends. Just after the hare's arrival the lion caught an animal, and called his friend to help him eat the meat. The hare on hearing the lion calling out to his friend to come to dinner,

answered, "Eat your meat, I'm not coming!" The lion, thinking that it was the badger that replied, was amazed that his friend should decline the invitation. A day or two afterwards the badger also shouted out to his friend inviting him to come and join him with his honey, but the hare answered as before, "Eat your honey yourself, I'm not coming!" The badger was greatly surprised that his friend should thus refuse his hospitality. Shortly afterwards the lion and badger met in the forest, when the former asked the latter why he had declined his invitation of a few days previous. The badger said he didn't hear the lion call him; if he had, he would certainly have responded to his kind invitation. "How strange it is," said the badger, "that I have also to upbraid you for having told me to eat my honey myself when I called you to join me." The lion indignantly denied having refused his friend's invitation, and assured him that he did not hear him when he called him. The surprise was mutual; and they concluded that there was someone who knew of their friendship and wanted to sever it. In order to find out the culprit, they decided that one of them should go to the spot from whence the voice came when either of them called the other. On the following day the lion called his friend, and the hare answered as before, when the lion went to the spot from whence the voice issued, and came upon the hare and caught him, and said, "To-day we will kill you; why do you strive to sever our friendship?" The hare said that if they wished to kill him, he was unable to defend himself, but he suggested that they should take him to an ash-heap and kill him there, as he could not be killed in a hard place like that where they found him. According to his request they took him to an ash-heap; and the lion took hold of one of his forelegs and dashed the rascal on the ash-heap, when the ashes flew up into his face and eyes, and so blinded him for the time being that he let go of the hare, who quickly made his escape."

SACRIFICE.

170. *Are sacrifices offered? Of what nature, and to what spirits or gods?*

170. Yes. Propitiatory. To spirits of forefathers.

171. *Are human beings sacrificed, and on what occasions? Are the victims captives or slaves, or the sacrificers' own children?*—No.

172. *Are substitutes sometimes employed in sacrifice? e.g., will a common animal be sacrificed instead of one which is difficult to procure? a part of an animal instead of the whole? an effigy or imitation instead of the real animal or thing?*

172. If a sheep cannot be procured, a hen is substituted. A part of an animal is not substituted for the whole. The Wagogo devour the whole carcase of the animal offered up, save the liver and lights, which they leave at the grave for the *mitungu*.

173. *Do persons ever sacrifice parts of themselves, as hair, finger-joints, blood, etc.?*—No.

MISCELLANEOUS SUPERSTITIONS.

174. *Have they any superstitions about shadows and reflections in the water?*—No.

175. *About sneezing and yawning?*

175. When a child sneezes, the father or mother kisses it, and prays that all evil may depart from it. When an adult sneezes, he prays that all evil may be driven away from him.

176. *About stepping over persons or things?*

176. (a) It is not right for one to step over another who has not yet buried or helped to bury a dead body; (b) It is not right to step over the trail of a snake; (c) Not right for one who has not spilt blood of enemy in battle to step over blood which has been shed by another in battle.

177. *About keeping silence at certain times?*

177. A man carrying a skin won't speak to those whom he meets on the road until they have first spoken to him.

178. *About the use of the right or left hand or foot?*

178. (a) Not right to receive a thing with left hand. (b) When one knocks his foot against anything when proceeding on a journey he will turn back.

179. *About footprints or the impress of their body in sand, or grass, etc.?*—No.

180. *About numbers?*—No.

181. *About animals and plants?*

181. They don't kill the puff adder, as it is supposed to be possessed by the *milungu*. As before stated, each clan has its forbidden thing which is counted unlucky to eat.

182. *About cutting hair or nails?*

182. When a relative dies, the bereaved person has his hair cut by a relative.

183. *About excrement?*

183. If one shows, or plasters another with excrement, he is liable to a fine.

184. *About spittle?*

184. (a) If one spits on his cousin, warts will appear on the offender, (b) The man who spits on another incurs a fine as purification. (c) If one evacuates in the house or garden of another, he is guilty of a grave offence.

185. *About names? Do they object to tell their own names? or to mention the names of any of their relations, of chiefs, the dead, etc.?*

185. They sometimes object. They do not mention the name of the dead without the prefix *mwazi* (absent, deceased, invisible).

186. *Are the names of persons changed at different epochs of life, or on various occasions, as during sickness or after a death? Are the names of common objects ever changed? What reasons do they give for these customs?*

186. At puberty young men and women give themselves fresh names. Names of objects are sometimes changed, but one does not know the reason why.

187. *Describe any other curious customs or superstitions which you may have observed?*

187. (a) A man whose wife or child dies, does not salute anyone until his hair [cf. 182] begins to grow. It is the same with a woman whose husband or child dies.

(b) To say one is like someone who is dead—fine, one ox or cow.

(c) To imprecate—fine, one ox or five goats.

(d) To break the jar in which butter for anointing is kept—fine, one ox.

(e) A husband who quarrels with his wife, and strips her garments, has to give a goat to her friends before she consents to accept her garments back.

(f) When a husband and wife quarrel every day and the wife at last says that she'll hang herself, the husband betakes himself to his wife's relations, where they have a palaver, and the woman's relatives pay a goat as a peace offering, and they all feast upon it. The wife, after this, gives up mentioning a rope.

(g) When a hamlet is encircled with magical protection it is wrong to walk round it.

(h) It is wrong to throw a stone from the court-yard to the outside of such a hamlet.

(i) It is also wrong to come and take fire away from such a hamlet.

(j) To roughen the nether millstone, after cattle have been taken to pasture, is counted unlucky.

(k) When the cattle are away feeding, the owner, in cleaning out their stable, will leave a little dung and not clear all away.

PASTORAL LIFE.

188. *Do they keep cattle? and what kind of cattle? Does every one keep cattle, or only the chiefs?*

Yes. Cows, sheep and goats. All keep cattle.

189. *Do they live on the flesh of their cattle or on the milk, or on both? Are cattle killed regularly for food, or only on special occasions? What are these special occasions? If they object to killing their cattle for food, have they an objection to killing and eating game?*

189. The Wamasai live on the flesh and milk, but not the Wagogo. Cattle are principally used as barter for food (i.e., corn) and purchase of wives.

190. *How are the cattle killed? Is there one way of killing them when they are to be sacrificed, and another when they are to be eaten?*

The poll of an ox is cut with a knife, a sheep or goat is smothered. The ox which is given to judges who try cases of witchcraft, is killed by striking it with club on poll.

191. *Is the killing of a head of cattle always or generally the occasion of a feast? Have other persons besides the owner of the cattle a right to share in such a feast?—*[No reply.]

192. *Are the cattle regarded as sacred in any way? What marks of respect are paid to them?—*No.

193. *Are the cattle milked and tended by men or by women? if by men, are the women rigorously forbidden to enter the cattle-yards and to meddle with the cattle?—*By males.

194. *Is any special sanctity attached to the dairy, and to the dairyman or dairy-woman? Has he or she to undergo any special training for the office? or to perform any ceremonies before or after milking the cattle?—*No.

195. *Are there any superstitious customs or beliefs about milk? Are any persons, in any circumstances (e.g., when wounded), forbidden to drink it? Is it forbidden to boil the milk? and why?—*No.

196. *Is drinking milk together a bond of union between the persons drinking? Does it constitute a bar to marriage between a man and a woman?—*No.

197. *Is any special use made of the dung and urine of the cattle in religious or other ceremonies? are they used as a means of purifying the person, house, utensils, etc.?*

Contents of stomach of sheep are used in purifying a house after a death. They drink the urine mixed with water in sacrificing for rain.

198. *Is any sanctity ascribed to the grass, or in general to the fodder of the cattle? Is it used in ceremonial or religious rites?—*No.

199. *Are the cattle ornamented in any way? are their horns twisted into special shapes?—*Bodies tattooed with hot iron. Horns not twisted.

AGRICULTURE.

200. *Are there any ceremonies or superstitions at clearing land for cultivation? at cutting down trees?—*No.

201. *Any superstitious customs at digging wells or bringing water for irrigation?—*No.

202. *How are the lands distributed for purpose of cultivation? has each man his own field, or are the fields owned and tilled by all the people in common? is there a periodical redistribution of land?*

Each man chooses his own garden. Each man has his own field.

203. *Are the same fields tilled year after year, or are they allowed to lie fallow for some years after cultivation?*

Allowed to rest after some years of cultivation.

204. *If the cultivation shifts periodically from one district to another, is the site of the village shifted with it? or does the village remain permanent?*

Chief's village remains permanent, but the people's villages as a rule follow the gardens.

205. *Does each man enjoy the produce of his field? or is the produce of all the fields thrown together, and then divided amongst all the people?*

Each man enjoys the produce of his field.

206. *Is the beginning of the New Year determined by agricultural operations, as harvest or sowing? Is there a period of general license and lawlessness at the New Year or at any other time?*

At time of circumcision¹ abusive language is very much indulged in, and the women especially lose all sense of modesty, and the country becomes a mighty Bedlam.

MISCELLANEOUS.

207. *Any superstitions about the birth of twins?*

Not amongst the Wagogo; but the Wetumba kill twins.

208. *Any peculiar ceremonies at the reception of strangers, especially foreigners or people of a different tribe?—No.*

209. *Any superstitious customs at building or occupying a new house?—Cattle.²*

210. *Have the natives any kind of money, or anything that passes as money, such as cattle, cowries, salt, etc.?—No.*

211. *How is the succession to the chieftainship or kingdom determined? What ceremonies are observed at the election or inauguration of chiefs and kings?*

Eldest son. If no son, brother succeeds.

212. *Is the daily life of the king or a chief regulated by special rules?—No. Has he to perform any sacred or priestly duties?—Yes. Describe all such rules and duties.*

They offer up sacrifices and most of them are rain-makers as well.

213. *How are priests elected? What rules of life have they to observe?*

Offices of priest and chief are united in the same person.

¹ It is not clear from Mr. Cole's MS. whether this refers to the Christian "Feast of the Circumcision" or to a native season-for-circumcising.—Ed.

² So Mr. Cole's MS. The meaning is not clear; but the custom of making sacrifices at the foundation of a new building is of course wide-spread.—Ed.

ANTHROPOLOGICAL NOTES ON SOUTHERN PERSIA.

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Royal Geographical Society.

[PRESENTED JUNE 10TH, 1902.]

SOUTHERN PERSIA and Baluchistán, as they appear on the map to-day, include or are adjacent to countries where perhaps the most ancient civilization of the world had its inception.

As a result of studying the deposits of silt in the valley of the Nile, it is now, I understand, considered certain that, previous to a fixed date, usually placed within the sixth millennium, Egypt possessed no cultivable land. The Nile Valley was consequently lacking in the necessary qualifications for civilization; whereas in the valleys of the Euphrates, Tigris, and Kárun, which—thanks to river communications, alluvial soil and a genial climate—a trained geographer would unquestionably select as suitable homes for civilization, the earliest past is yet to be discovered.

Before then approaching our subject, I propose to describe briefly the physical features of the country we are about to discuss. Southern Persia is washed by the Persian Gulf, which formed part of the "Erythrean Sea" of the ancients. Although proofs are not yet forthcoming, we may hope that when the Bahrein Islands, the ancient home of the Phœnicians, yield up their secrets, it may be shown that it was in the Persian Gulf that navigation came into existence. Apart from the inherent probability of this theory, we have the most remarkable legend given by Berosus, that Chaldea was taught the arts of life by a creature, half fish, half man, termed On. This surely points to the arrival of highly civilized strangers by sea; but, further than this, all is conjecture.

Geographical Considerations.

The boundary of Persia on the west is the Shatt-el-Arab, the majestic river which is primarily formed by the junction of the Tigris and Euphrates, and which receives its main tributary, the Kárun, some forty miles from the point where it flows into the Persian Gulf. It would take too long to discuss the hydrographical problems connected with these wayward rivers, and it must suffice to state that in early prehistoric times they reached the Persian Gulf without uniting, and that the sea came further north. The Shatt-el-Arab is consequently a comparatively modern course, and it is useless to seek for traces of the past on its banks. The modern province of Arabistán, which is mainly a section of the wide alluvial plain through which all these rivers run, includes the famous kingdom of Elam with its ancient capital of Shush or Susa, the Shushan of the book of Esther, which is yielding a rich harvest to that skilled archaeologist, M. de Morgan.

Further east, as far as the frontiers of Baluchistán, there is a low-lying coast strip of varying width, where the palm flourishes and where wheat and barley are reaped in the early spring; but this district has at its back the elevated

Íránian plateau, which is buttressed up by successive ranges of hills, running more or less parallel to the coast. The importance of these ranges, with their regular north-west trend, is considerable, as, thanks to their rugged regularity, nowhere can Persia be easily entered from the sea-coast, and this fact has materially affected its civilization. Furthermore, from the Shatt-el-Arab to the Indus, a distance represented on the map by 20 degrees of longitude, no important and indeed no navigable river reaches the sea; the rivers in the interior, chief among which is the Helmand (the classic Etymander), discharging their waters into inland swamps or lagoons, known as *Hâmun*. Another remarkable phenomenon is the funereal waste of the Lut, the great desert of Persia. Not only does this huge blighted area separate Northern and Southern Persia from the frontiers of Afghánistán, as far west as the Tehrân-Isfahân-Shiráz road, much more effectually than any range or sea; but its sinister influence stretches down so far south as to divide Persia from Baluchistán, and thus aggravate the inaccessibility of that desert province.

From the above account it will, I think, be conceded that, owing to its configuration, the fertile country to the west of Persia was from earliest times favourable to civilization, as indeed was the Indus Valley to the east of Baluchistán, whereas in close juxtaposition were the rugged ranges and barren uplands of Persia with its savage but hardy shepherd tribes. Although not as barren or as rainless as to-day, Persia was never anything but a poor country, wealth mainly consisting in the valour of its inhabitants, whereby Chaldea and distant Egypt were all made tributary to the Great King.

A Find of Bronze Objects from Khinámán.

Connected with man on the Íránian plateau are the interesting bronze implements. They were found quite by accident by one of my Persian friends, who was trenching some ground with a view to laying out a garden at Khinámán forty miles to the west of Kermán city. The little district is composed of barren hills, and the site of the find was in a valley which opens out on to a wide plain, across which runs the main Kermán-Yezd road.

The bronzes, which were discovered some 5 feet below the surface of the ground, were placed in what was evidently a cemetery. The corpses were all dust, so that it could not be ascertained in what direction they had been laid—a very important point—and in each tomb was a jar, of yellow clay, and of good workmanship with a somewhat rudimentary pattern. Chief among the bronzes is an axe-head (Fig. 1.a) about which Mr. C. H. Read has kindly given me the following note: "The special interest of the bronze axe found at Khinámán is that its form shows it to be, not a useful weapon, but a survival or degradation of such an implement. The angle at which the blade is set to the handle shows that it can have no real utility, while, on the other hand, the exaggerated crest which forms a sort of counterpoise to the blade is out of all proportion to the mass of the weapon as such.

"The axe from Armenia (Fig. 1.b) a fairly remote district, in Canon Greenwell's collection, has certain analogies with it, but differs essentially in being manifestly

a serviceable weapon. The socket, in this case, is large enough to admit a stout strong handle, while the ornamental lion is small, and well adapted as an ornamental appendage. The angle at which the blade is set to the shaft is also a clear indication that it was intended for use. Widely different in general



FIG. 1.—BRONZE AXE-HEAD (a) FROM KHISÁMÁN COMPARED WITH AXE-HEAD (b) FOUND IN ARMENIA.

From "*Ten Thousand Miles in Persia*," p. 442. Block kindly lent by Messrs. Murray. The axe-head (a) and the rest of this find are in the British Museum. (Cf. *Archæologia, triii.*, pp. 8-1.) appearance as these two objects are, there seems to me to be a clear resemblance in essentials, and in time this may be made clearer by further excavations and discoveries in the country intervening between south-east Persia and the Black Sea."

The other bronzes include some artistically worked pins, arrow and spear-heads, a knife, and what may be a razor. There is also a pair of bracelets, some copper bowls, a rudimentary lamp and a small vessel, which is the exact counterpart of the drinking vessel carried by every Persian to-day, and two handles, which do not fit the axe-head, complete the list. My host said that there was a number of these interesting articles, but they were all thrown away. Great jars much like those used to-day for storing grain, but wider in shape, were also shown. Some yellow dust was found in them, but no specimen was forthcoming.

Finally two or three cornelian gems were spoken of, but these I did not see. The custom of placing a cornelian gem in a dead man's mouth, with the names of

the twelve *Imám* engraved on it, is one that still obtains and may be very ancient. There was no trace of iron in the find, so far as I could learn.

During my recent visit to Paris I carefully examined the De Morgan collection from the country behind Lenkorán, which, although forming part of the Russian empire since the treaty of Turcomanchai, was until that date a province of Persia. M. de Morgan found a huge cemetery and excavated many bronze implements, some of which resemble that from Khinámán, but I saw nothing at all approaching to the beautiful axe.

If the theory of a bronze culture of Central Asia be maintained, the above find is of extreme value; in any case its interest is considerable.

M. de Morgan's Observations at Susa.

During the past nine years, I have been trying, in a humble fashion, to find out something about the various peoples among whom my lot has been cast. In the extreme west of Southern Persia the excavations of M. de Morgan at Susa will undoubtedly throw much light on this difficult question; but, as he himself writes, "the origin of Susa is lost in the night of time"; the field is still wide enough for the explorer.

Among the most interesting of M. de Morgan's discoveries are those of fragments of vases bearing geometrical patterns and sometimes flowers or animals painted in black. These belong to a style of pottery which has been found in Egypt, Syria and Cyprus, and which has been attributed by him to the eighteenth century B.C. Again, the remains met with at a depth of 15 metres, chief among which is the black obelisk of Manishtu-su, date, on this reckoning, from about the thirty-ninth century B.C., and M. de Morgan says that he dare not give the date of the 20 metres of remains lying below.²

Here then we are groping in what is at present but the false dawn of history, and until M. de Morgan publishes the results of his labours we must be content to discuss far more modern epochs, although we know enough to believe that the institution of the week and the legend of the Deluge, among other ancient landmarks, came to the Assyrians from Elam.

Anthropological Notes.

Throughout the course of my wanderings, I have noticed that everywhere the low-lying country, especially in its more inaccessible parts, is inhabited by a very dark race; Bashákird, Paskuh, and the Kalagán valley being particularly noticeable in this respect.

At first, in my ignorance, I attributed this to imported slave blood, but the whole of the *Garnsir*, as the hot country is termed, possesses a similar type of population, except where, in comparatively recent times, invading tribes have occupied the more fertile tracts, and, very frequently, migrate to the uplands during the summer.

M. Dieulafoy, who discovered the famous frieze of the black archers at Susa,

¹ De Morgan, *La Délégation en Perse*, p. 1.

² *La Délégation en Perse*, p. 83.

which dates from the time of the Achaemenian dynasty, mentions the existence of *negroid* skulls in the Parthian necropolis of the Menmonium, which confirm the classic writers.

Of these Herodotus is of course *facile princeps*, and it is most interesting to know that the seventeenth satrapy of Darius included Ethiopians of Asia, who, it is to be observed, had straight as opposed to curly hair.

The seventeenth satrapy was roughly Baluchistán of to-day, where we have an Aryan immigration which I shall discuss later, and also the dark Bráhuí tribe, which is certainly of Dravidian origin, as regards their language.

In appearance the Bráhuí is darker, shorter and more thick-set than the Baluchi. According to their own legends, they were poor shepherds, who came to the assistance of their Hindu raja in the seventeenth century, and finally conquered the country.

Whether the straight-haired Ethiopians were these Bráhuís, and whether there was one Dravidian race stretching from India to the Shatt-el-Arab, it is hard to say, but this seems the most likely theory and is supported by classic and medieval writers. Among the latter the great geographer Yakut mentions the Khuzis as an abject, black to copper-coloured, race, inhabiting what is now known as Arabistán, albeit the term Khuzistán still lingers.

However, until much more is known as to the measurements of these tribes, their language, and their customs, it would be unwise to form theories on too slender grounds.

I would now invite your attention to the district of Sistán which is situated in the centre of Eastern Persia. Sistán owes its existence to the fact that the Helmand discharges its waters into a lagoon, and modern inhabited Sistán is practically the delta of the Helmand.

Until quite recently Sistán was termed Sagistán, and in the Augustan age the province was known as Sakastáni and is referred to by Isidorus of Charax, who was despatched by the Cæsar on what we should term a reconnaissance.

The term Sakastáni is of interest as embodying the fact that it was the home of the Sacæ (*Σάκαι*). The exact date of their arrival is almost definitely fixed by the fact that in the British Museum there is a silver coin of Plato Epiphanes, a contemporary of Eucratides of Bactria, who ruled in Sistán about the middle of the second century B.C., so that the Sacæ arrived between that date and the journey of Isidorus of Charax, say about 130 B.C.

A little later, their offshoot, the Scytho-Parthian Kings, issued coins in the lower Indus valley, so that during this period the wastes of Baluchistán were traversed by a south-easterly route. In fact Mr. Kennedy mentions that the Chinese annals corroborate Isidorus of Charax in this particular.

In 1896, when travelling up the valley of the Raksh'an from Kuhak and Panjgur to Quetta I passed numerous sites of great cities, and the valley was terraced for a distance of many miles. When Mr. Kennedy mentioned this Sistán-Sind route, it at once struck me that these were cities of the Sacæ, and a reference

to the map shows that they lay exactly between Sistán and the lower Indus. This fact is, I would suggest, not without importance.

In an earlier part of this paper reference was made to the Aryan influx into Baluchistán, and we are confronted by the problem as to who the Baluchis are. As their ignorance is only equalled by their pride, and as they know but little about their own history, we are driven to seek for information elsewhere.

According to Professor Rawlinson, Baluch is derived from Belus, King of Babylon, who is identified with the Nimrod, son of Cush, of Holy Writ. These two names are reproduced in the term Baluch and Kuch, the usual name of these savage tribes.

Indeed Kuch is the same as the Kech or Kej valley and possibly also Kach is a form of it. Throughout the Sásánian period, Kussun, probably the same word again, was the name of Baluchistán.

In Firdusi's great epic, the *Sháh Náma*, the Baluch are mentioned as a tribe occupying Gilán (on the southern shores of the Caspian) during the reign of Noshirwán, and they apparently migrated to their present home *via* Sistán. There was, however, an admixture of Arabs flying from persecution in the early days of the *Hijra*, and if we accept this together with a few later arrivals in historic times such as the Kurds of Sarhad and the Noshirwánis from near Isfahán, we can, in my opinion, satisfactorily account for the Baluchis, whose language belongs to the Iránian branch of the Aryan family. Baluchistán however rivals the Caucasus in its ethnological puzzles, the Meds apparently being survivors of a still more ancient race, and I hope that in the near future more attention may be devoted to this subject.

The Gypsies of Persia.

The question of their origin is such a vexed one that I propose simply to give a *précis* of the information that I gathered about this interesting people. In Persia they bear different names in different provinces, generally however speaking of themselves as *Finj*, which is said to be Arabic. In Kermán they are known as *Luli*,¹ but in Baluchistán as *Luri*. In Fárs *Kaoli*, a corruption of *Kábudi*, is their usual appellation, although *Gurbati* is also used. In Azerbaijan we find the name *Karzi Chi*; in Khorasán *Krishmál*, a corruption of *Gheir-i-Shumár* or "Out-of-the-Reckoning," and, to go further afield, in the Chengyáni of Turkey we find an approximation to, or the origin of the European *Zingari*.

Their occupations in Persia hardly differ from what we see in England, and I have frequently met them carrying round gaudily-painted spinning-wheels or pipe-stems for sale; occasional working in iron, and dealing in horses, camels, donkeys, or any living animal, completes the tale of their trades. Their character is considered to be bad. The men cannot easily be distinguished from the surrounding peasantry, but the women dress differently, while their features are certainly not those of the Persian peasant. The tribe is governed by the *Shátir Bashi* or Chief Runner of the Sháh, who has his deputies in every province.

¹ In Central Asia the word is *Liuli*. Cf. *Man*, 1902, 126.

Their language, of which I compiled a vocabulary, is termed *Gurbati*, and is spoken with slight variations all over Persia. Their numbers are considerable, five thousand families alone inhabiting Azerbaijân, while the total in Persia may amount to twenty thousand families, or about a hundred thousand souls.

Kermân has from three hundred to five hundred families under Shâh Kerim, a terribly stupid man, whom I sent for to check the vocabulary which I had collected from two different sets of gypsies. He told me that the province was divided into beats, and that, what with a monopoly in turning and mending wheels, etc., they made a fairly good living. He also said that they rarely married outside their tribe.

	Gypsy.	Transliteration.
God	یا پاری یا پاری	<i>pâpari</i> or <i>pâbari</i> .
Man	مارس	<i>mâris</i> .
Woman	ندیو	<i>nadeo</i> .
Child	جادر یا جادو	<i>jâdar</i> (or <i>jâdu</i> also "son").
Girl	دیرک	<i>dîrak</i> .
Husband	مگد	<i>muggad</i> .
Head	راسه	<i>râsah</i> .
Hair	پلمک	<i>palmak</i> .
Eye	نهور	<i>nuhûr</i> .
Nose	دماغ	<i>damâgh</i> (same as Persian for 'brains').
Mouth	دهن قاس	<i>dahan gâs</i> (<i>dahân</i> being Persian.)
Tooth	دهن کی	<i>dahan ki</i> .
Tongue... ..	زبان	<i>zabân</i> (P.).
Ear	گوش کی	<i>gushki</i> .
Lip	لبکو	<i>labko</i> (P.).
Hand	چنگاو	<i>changâo</i> .
Foot	پا غلیب	<i>pâ ghalîb</i> .
Arm	باکی	<i>bâki</i> .
Horse... ..	کهورا	<i>ghora</i> (like Hindustani).

	Gypsy.	Transliteration.
Ox	تیرنگ	<i>tírang.</i>
Cow	تیرنگ مازلو	<i>tírang mázilu.</i>
Donkey	قره	<i>girreh.</i>
Dog	سنفتا	<i>sannuftá.</i>
Fowl	تینای	<i>tenái.</i>
Duck	تینای کرن بلند	<i>tenai gardan baland.</i>
Bird	تینای	<i>tenái.</i>
Black	سوتای	<i>sútái.</i>
White	سفینو	<i>safínu.</i>
Big	قوار اونده یا بهوج	<i>gav-ár úndeh also bahúj.</i>
Small	قوار خلیلتر	<i>gavár khaliltur.</i>
High	لبند	<i>laband.</i>
Bad	ناشکاب or ناسخ	<i>náshigáb or nádakh.</i>
Good	ده خوابه	<i>dah khâbeh.</i>
Tiger	شیر	<i>shír (P.).</i>
Cheese	لمبر	<i>lamír.</i>
Bread	منا	<i>maná (cp. manna).</i>
Night	لیل	<i>lail (A.).</i>
Daybreak	سکال	<i>sakál.</i>
Day	روز	<i>rúz (P.).</i>
Blood	لو	<i>lu (luli ?)</i>
Firewood	خشبوک	<i>khashbúk.</i>
Tree	درخت	<i>darrakht (P.)</i>
Wood	کاشتا	<i>kásh tá.</i>
Fire	نارک	<i>narak.</i>
Flower	گل	<i>gul (P.).</i>

Verbs.

	Gypsy.	Transliteration.
To do ...	ایماشتم	<i>ímáshta(m)</i> or <i>(n)</i> .
" make {	دخا	<i>dakhá.</i>
" burn ...	ایماشتم	<i>ímáshta(m)</i> or <i>(n)</i> .
" say ...	کومیدم	<i>kámídam.</i>
" speak ...	ایماشتم	<i>ímáshta(m)</i> or <i>(n)</i> .
" agree ...	گلت تبردم	<i>galt taburdam.</i>
" find, procure	هاشنیدم	<i>há shanídám.</i>
" beat ...	هاکیدم	<i>hákídám.</i>
" die ..	تبردم	<i>taburdam</i> (cp. to speak).
" kill ... {	میته	(Note in Persian the idiom is "to beat words" for to "talk.")
" throw ...	میتوند(م)	<i>mayti.</i>
" cut ...	ن	<i>mahtúndám.</i>
" take ...	پیوندم	(according to chief).
" give...	بدا لیدم	<i>Peándám.</i>
" run ...	هاشنیدم or دالیدن	<i>budálídám.</i>
" keep ...	بنیدم	<i>háshnídám, dálídám.</i>
" know ...	پلمیدم	<i>brnídám.</i>
" love...	نگور داشتن ایماشتم	<i>palmídám.</i>
" kiss...	سگیدم	<i>nigúr ímáshтам.</i>
" beg ...	باکی اناشتم	<i>sagídám.</i>
" beggar ...	مناچ کردن	<i>báki ínáshтам.</i>
" tear...	مانگزاء کردن	<i>mách kardan.</i>
	میانته	<i>mánpázi kardan.</i>
	پار توماشتم	<i>miántch.</i>
		<i>pár tímáshтам.</i>

	Gypsy.	Transliteration.
To sit	توبیدم	<i>tobîdam.</i>
„ live	ده خوابم کردم میکم خودم	<i>dah khâbm kardam, mikam khodam.</i>
„ stand	واتو بیدم	<i>vâto bidam.</i>
„ stay... ..	ماندن توبیده	<i>mândan tobîdeh.</i>
„ eat	اشمو لیدم	<i>ishmo lûdam.</i>
Yes	بلی	<i>bali (P.).</i>
No	نیدیک	<i>nayik.</i>
Tent (black) ..	لغاس	<i>lafâs.</i>
Country	پوتوی	<i>pûtoi.</i>
Water	پونو	<i>ponû.</i>
Meat	دوهوت	<i>dohût.</i>
Food	کاتی	<i>kâtî.</i>
Iron	لو	<i>lû (cp. blood).</i>
Copper... ..	کنار	<i>kunâr.</i>
Brass	ریز	<i>riz.</i>
Silver	پاله سفینو	<i>pâleh safînû.</i>
Gold	لادا	<i>lâdâ.</i>
Money	پاله	<i>pâleh, cp. pul (P.).</i>
Strangers, <i>i.e.</i> , any special name for people not belonging to the tribe.	مارس	<i>i.e., man.</i>
Anvil	سندان یا لو	<i>sandan (P.) or lû.</i>
Hammer	چاکش	<i>châkush (P.).</i>
Bellows	دم آهنگری	<i>dam ahengari (P.).</i>
Tongs	انبور	<i>anbûr (P.).</i>
Saw	بدنی	<i>badanî.</i>
Hatchet	چتن	<i>chatan.</i>

		Gypsy.	Transliteration.
1	...	ایک ہات	<i>yek hát.</i>
2	...	دو ہات	<i>dú hát.</i>
3	...	سہ ہات	<i>seh hát.</i>
4	...	چہار ہات	<i>chahár hát.</i>
and so on as the Persian, with the addition of <i>hát.</i>			

NOTE ON MAJOR SYKES'S "ANTHROPOLOGICAL NOTES ON SOUTHERN PERSIA."

BY D. G. HOGARTH, M.A., F.R.G.S.

No one will be inclined to dispute Major Sykes's hypothesis that civilization on the Iranian Plateau was a much later product than in the Western River Country; though many will demur to two propositions which he suggests by the way; (1) that civilization in the Nile Valley is posterior to the sixth millennium B.C.; (2) that Bahrein taught Chaldea the arts of life. In the latter case it is a thousand to one the truth was the other way about. The assumption that Bahrein was the original Phœnician home is wholly unproved, and its probability was, if anything, weakened by Mr. Bent's abortive researches there some years ago; nor does it follow at all that the Phœnicians, when in the Erythrean Sea (if they ever were there) were a highly civilized people.

The interesting objects found by Major Sykes in a cemetery (?) near Kermán did not, when I saw them, strike me as of very early date; but such things, found at a great distance from any other objects of similar character, are most difficult to fix. The pottery might have been of almost any period, so rude was it: the bronzes—well, we have not the faintest notion how late the use of bronze may not have come down in Southern Persia. There has been no such systematic work done in the Iranian Plateau yet as would give us a criterion for these things, and I greatly doubt if De Morgan's excavations at Susa will help us much for things beyond the mountains. I should be very chary at present of accepting his sensational chronology of the Susian strata. We have had this piling up of the millennia at Nippur already, without its carrying conviction. There is, perhaps, no more treacherous criterion than the thickness of strata, the rate of whose deposit necessarily varies much with the various causes which induce it. For example, the sack and ruin of a town, and its subsequent reconstruction by builders, who make a fresh platform with the old materials, will add strata in ten years, which may seem to represent a thousand.

NOTE ON MAJOR SYKES'S GYPSY VOCABULARY.

BY M. LONGWORTH DAMES.

AN examination of the vocabulary of the language of the gypsies of Southern Persia given by Major P. Molesworth Sykes in his "Anthropological Notes on Southern Persia," shows that this dialect cannot be considered a true language, but that it is rather an artificial secret dialect or jargon such as prevails among similar tribes in India, the Changars, Doms, etc. Nor can it be in any way identified with the Romany of Europe, which is a true Indian language, derived probably from an Aprabhansa Prākṛit.

As far as can be judged from the specimens given, the grammar is based on Persian; the termination of the infinitive being the Persian *tan* or *dan* corrupted generally into *tam* or *dam*. This is often combined with non-Persian roots in a manner suggestive of Pehlevi, as in *mahtundam*, to kill, which is evidently a causal form of *mayti*, to die (from Arabic *mayt*, dead), or *bunīdam*, to give, which bears a strong resemblance to the Pehlevi *yaha-būntan*, to give. Some true Persian verbs are used in forming verbal phrases, as *kardan*, to do, *māndan*, to remain, and *dāshtan*, to hold; in the phrases *dah-khābm kardan*, to live, *māch kardan*, to kiss, *māngnāi kardan*, to beg, *māndan tobīdek*, to stay (cf. Pers. *nishasta māndan*) *nigor dāshtan*, to keep. But other auxiliary verbs such as *imāshtam*, to do, *taburdam*, to beat, are also used.

The vocabulary consists of ninety-seven words, of which the following can be classed as of Indian origin.

Man	..	<i>māris</i>	...	Cf. Sindhi and W. Panjabi <i>murs</i> , Romany <i>mursh</i> and <i>mūsh</i> .
Horse	...	<i>ghora</i>	..	Hind. <i>ghoṛā</i> .
Donkey	...	<i>girrēh</i>	...	Cf. Hind. <i>gadā</i> , Pashto <i>gaḍah</i> .
Bread	...	<i>manā</i>	...	Sindhi, <i>māṇī</i> , Rom. <i>manro</i> , etc.
Wood	...	<i>kāshṭā</i>	...	Skr. <i>kāshṭa</i> , Rom. <i>kosht</i> , <i>kāshṭ</i> , Hind. <i>kāṣh</i> .
Water	...	<i>ponū</i>	...	Hind. <i>pānī</i> , Rom. <i>pānī</i> .
Blood	..	<i>lū</i> (<i>tūli</i> ?)	...	Hind. <i>lahā</i> .
Iron	...	<i>lū</i>	...	Hind. <i>lohā</i> .
Speech	...	<i>galt</i> (in the phrase <i>galt taburdam</i> , to be at words).		Sindhi, etc., <i>gālhu</i> , Panj. <i>gal</i> .
Beg (to)	...	<i>māngnāi</i> (in the phrase <i>māngnāi kardan</i>).		Hind. <i>māngnā</i> .
Tear (to)	...	<i>pār-tūmāshtam</i>		Hind. <i>phārnā</i> .
Hair	...	<i>palmak</i>	...	Hind. and Rom. <i>bāl</i> .

Possibly also *māch*, kiss, in the phrase *māch-kardan*, may be an inversion of Hind. *chām*. The Indian element, therefore, does not amount to more than an eighth or a ninth of the whole vocabulary.

A few words are clearly Arabic. These are :—

Head	...	<i>rāsah</i>	...	Ar. <i>rās</i> .
Night	...	<i>lail</i>	...	Ar. <i>lail</i> .
Fire	...	<i>nārah</i>	...	Ar. <i>nār</i> .
To die	...	<i>mayti</i>	...	Ar. <i>maīt</i> , dead.

Twenty-eight words are Persian, although some are curiously altered as *bā-ki* for *bāzū* (arm), *pāleh-safintū* for *pūt-i-safid* (silver). Some are transposed as *laband* for *baland* (high) *lafās* (a black tent) probably for *falāsī* (a carpet), and *lamīr* (cheese) seems to be a deliberate perversion of *panīr*.

There remain about fifty-two words or parts of words, about half the whole vocabulary including nearly all the verbs, which cannot be referred to Persian, Indian or Arabic origins, and I can find no explanation for them in the neighbouring dialects of Balochi or Brahui. Possibly some of them may be found in Persian dialects. The form is no doubt often deceptive. For instance *bākī imāshtam*, given as "love," should probably be "embrace." *Bākī* is the word given for "arm," and is the Persian *bāzū*; the whole phrase being equivalent to *bāzū kardan*, to embrace.

The following words are specially noteworthy, being unlike either Persian or Indian :—

God	...	<i>pābarī</i>	Size	...	<i>gavār</i> (found in
Woman	...	<i>nadco</i> .			the phrases <i>gavār undeh</i> —big,
Girl	...	<i>dīrak</i> .			and <i>gāvar khaliltar</i> —small,
Husband	...	<i>muggad</i> .			which apparently mean "large
Eye	...	<i>nuhūr</i> .			size" and "small size.")
Ox	...	<i>tīrang</i> .	Bad	...	<i>nāshigāb</i> .
Dog	...	<i>samftā</i> .			<i>nādakh</i> .
Bird, etc.	...	<i>tenār</i> .	Good	...	<i>dah-khābeh</i> .
Black	...	<i>sutār</i> .	Daybreak	...	<i>sakāl</i> .
Country	...	<i>pūnoi</i> .	Brass	...	<i>riz</i> (cf. Persian
Meat	...	<i>dohūt</i> .			<i>bīring</i>).
Saw	...	<i>badanī</i> .	Gold	...	<i>lādā</i> .
Hatchet	...	<i>chatan</i> .	Food	...	<i>kātī</i> .
Copper...	...	<i>kumār</i> .			

The syllable *hāt*, affixed to the Persian numerals, is also remarkable.

The original verbs, omitting compound phrases, are—

<i>imāshtam</i>	...	to do.	<i>dātidan</i>	...	to take.
<i>taburdam</i>	...	to strike or beat.	<i>bunīdam</i>	...	to give.
<i>kūmīdam</i>	...	to burn.	<i>palmīdam</i>	...	to run.
<i>hākīdam</i>	...	to find.	<i>dagīdam</i>	...	to know.
<i>ishmotīdam</i>	...	to eat.	<i>būdātidam</i>	...	to cut.
<i>peundam</i>	...	to throw.	<i>hāshnīdam</i>	...	to agree, or to take?

tobīdam ... to sit.

wāto-bīdam ... to stand.

In the two verbs *tobīdam* and *wāto-bīdam* the last element, *bīdam*, is probably the Persian *būdan*, the phrases being equivalent to

nishasta-būdan—to sit, and

istāda-būdan—to stand.

It would seem from this analysis that these gypsies have retained less of their Indian language than the gypsies of Europe, but evidently further materials are required before any adequate idea of the language can be formed.

CLASSIFICATION AND ARRANGEMENT OF THE EXHIBITS OF AN ANTHROPOLOGICAL MUSEUM.¹

BY WILLIAM H. HOLMES, Head Curator, Department of Anthropology,
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[PRESENTED NOVEMBER 11TH, 1902.]

Scope of the Anthropological Field.—The history of man, including all that he is and does and all that he has been and has done, is a wide and important subject, and is fortunately susceptible, in large part, of lucid and effective treatment in the museum. The available materials are of two principal classes; the first relates to man himself as a biological unit, and the second to the works of his hands, the creations of his developing mind. These two divisions of the subject are readily separated and require independent treatment in the museum. The first division is known as *Physical Anthropology*, often called *Somatology*; the second may in contradistinction be called *Culture Anthropology*, since it embodies the vast range of the essentially human activities.

The Somatologic Division.—If we discuss man independently of his arts—his artificial activities—we treat him from the standpoint of the naturalist or biologist. Physical anthropology includes the study of man as a species of animal, of his races and varieties, his external characters, his anatomy, physiology, and pathology. It includes his ontogeny—the development of the individual—his inception and embryonic evolution, his advance to maturity, his descent to the grave, and return to the elements whence he arose. It includes his phylogeny—the development of the species from lower forms of life, the evolution of every part of his frame—the skin, bones, muscles, circulatory system, nervous system, and other special organs; and the relation of these parts one and all to corresponding parts of the lower animals. This is a magnificent field for illustration, and in capable hands may readily fill a museum with exhibits of superlative interest and value. It is true that man is properly treated along with the lower orders of creatures as one of a great system of biological units, and he should therefore be included in all general biological presentations in museums. But anthropology requires more than this systematic biological treatment. Man's physical evolution and anatomical structure correlate directly with all his activities—race and culture are intimately connected. The naturalist could more consistently separate, in his museum presentation, the bird from her nest or the bee from its comb, than could the anthropologist divorce

¹ The scheme elaborated in this paper is now being carried out in the United States National Museum, as rapidly as conditions will permit.

human handiwork from the man. There is excellent reason, therefore, for making an especial study and exhibition of physical man in immediate association with culture exhibits. It is necessary to bring together everything that relates to the great human unit. The anthropological museum should present physical man in the most complete and exhaustive manner. However, it is not the purpose at present to take up this branch in detail, but rather to give almost exclusive attention to the phenomena of culture.

The Culture Division.—If the physical phenomena of man include all that connects him *with* the brute, his culture phenomena include all that distinguishes him *from* the brute. If we wish to realize more fully the scope of the latter division of the subject, which includes the objective evidences of culture, we have only, in imagination, to sweep away all the multitude of things that it has brought into the world; destroy every city, town, and dwelling; every article of furniture, picture, sculpture, book, textile fabric, fictile product; every article of clothing and ornament; every vehicle, machine, utensil, and implement, and in fact, every trace of human handiwork; set aside the use of fire and cooked food; banish all language, social organization, government, religion, music, literature, and intellectual life generally. When this has been done we may behold the real man standing in his original nakedness among his fellows of the brute world.

Limitations of Culture Material.—The material evidences of culture are thus seen to be of vast extent and importance; but it should be observed, notwithstanding this fact, that all of culture cannot be illustrated in the museum, for we can utilize material things only. We cannot show by its collections the social, moral, religious, and intellectual traits of man save in an indirect way. We can do little to illustrate language save by displaying the methods of its expression to the eye in pictures and letters. We can tell little of religion save by assembling the idols and devices that represent its symbolism, and the paraphernalia which pertain to the practice of its rites. We can tell nothing of music save by a display of the curious array of instruments used in producing sound; and society and government are even less within the sphere of the museum. Yet it is wonderful how much of the immaterial side of the race can be illustrated by the material things that man has used and made; for the mind is *in* the things and was developed *with* and *by* the things more than is commonly understood.

Classification of Culture Materials.—But what shall we attempt to show in the culture division of our Anthropological Museum, and how shall we classify and place our collections? Classification is the first essential. Taking a view of the world and its inhabitants from a sufficiently distant point of view, a few of the greater groups of facts attract the eye. *First*, we observe that men are of several distinct races and varieties; but a closer look demonstrates that these are not separated one from another, but are intermingled in such ways as to afford no basis, save the most general, for a grouping of their culture products. *Second*, we observe that nearly all peoples are separated into social and political groups—into clans, tribes and nations—occupying distinct areas of the habitable globe.

Looking closer at these, one sees that they are not all alike; that the widest possible differences in condition and culture status exist. Some of the groups are savages almost without art and without any evidences of higher culture; some are more advanced, occupying the barbarian grade, while still others are highly cultured and surrounded by a thousand evidences of enlightenment and luxury. Shall we then classify and display our museum exhibits on the basis of this grouping of the peoples into tribes and nations? Let us see what would be the result. The British Empire is a nation of commanding power and boundless territory, but its culture materials would comprise every variety of product under the sun, from the lowest to the highest, and from every known region of the globe. The same is true of nearly all of the civilized nations. It is evident, therefore, that units of this class are too large and too complex to be of use in classification. Besides, civilized nations may well be expected each to have and maintain its own national museum.

Let us take another illustration. Suppose that we decide to arrange our collections by the inferior, social, or political units—as by states or tribes. Investigation shows that these units are too small, that we should have thousands of exhibition units—too many, entirely, for practical purposes of grouping and installation. Besides, some are artificial divisions and some are natural divisions, and the classification would be mixed and wholly unsatisfactory. What is wanted is a simple natural grouping of the very diversified ethnic phenomena.

Glancing a *third* time over the field, and noting especially the culture of the various groups of people, we find that it varies with the *region* rather than with the race or nation, and that there is a significant relation between it and environment. What uncivilized men do and have done in any region depends much upon the climate and natural productions of that region. The arctic provinces have one culture, the tropical another; the arid plains have one group of activities, the humid regions another. The inland district has a race of hunters and develops hunting arts, the maritime people becomes a race of fishers and develops fisher's arts, and so on. Culture is thus so much the outgrowth of the region that its products may be assembled by geographical areas, and these may be large or small as occasion demands. The continents, great islands, and groups of islands are subdivided into minor areas. These are called by anthropologists "specialization-areas," because they have given special characters to the culture developed within them. They have nothing to do with political lines and they disregard modern civilization, because it has broken over all natural limits, and by means of railroads and ships carries its generalized culture to the ends of the earth. But as these areas are largely those in which specialized cultures have had their inception and early development, it is by these that the student can best study, and the curator best illustrate, the phenomena of humanity. Within the space assigned to each of these geographic groups in the museum should be assembled illustrations of everything the area produces, no matter what the race, the nation, the culture stage, or the time represented, excepting always

the intrusive generalized elements of civilization, which must be treated separately in museums of national history.

The Geo-ethnic arrangement.

Now the museum-materials intended to illustrate a given geographic-ethnic territory should be such in character and so arranged that the student or visitor, passing through the hall or halls in which they are installed, may gather quickly a clear impression of the people and culture of the area represented. I say first *people*, because, after all, it is the people we are studying, and a display of all the culture phenomena of a region without some definite illustration of the people concerned would be wholly unsatisfactory. The man himself, as he appears in his everyday life, is the best illustration of his own place in history, for his physical aspect, the expression of his face, the care of his person, his clothes, his occupations, his general appearance and social relations, tell the story with much clearness.

So, since we cannot display the people themselves, we should begin each of our ethnical exhibits by building a lay-figure group showing a typical family of the area illustrated—the men, the women, and the children engaged in ordinary occupations and surrounded by the things they make, and use, and love. Physical characters should be portrayed with all possible accuracy, and a correct impression of the disposition and social attitude of the members of the group should be given. Then, around this family group, should be arranged, in separate cases, series of objects illustrating their arts, industries and history.

Following the family group, the next most important culture unit is the dwelling group, which may be modelled in miniature (say one-twelfth or one-twenty-fourth actual size), and illustrate their houses and constructions of all kinds as well as something of the home arts and life. Miniature figures of men, women and children may be introduced into the dwelling group to illustrate graphically the practice of culinary arts, manufacture of basketry, weaving, pottery, the use of domestic animals, etc.

Illustrations of other activities should follow the dwelling group in the order of their importance or significance, each exhibit (consisting of the actual objects, or of models) being of sufficient extent to serve as a synopsis of the work of the areas represented. The method of arranging these series is discussed in detail further on. Along with these exhibits should be taken up the archaeology of the area, the prehistoric cultural relics and remains, carrying the story back to the earliest times. The exhibit of each area should be supplemented by maps, pictures, and labels, thus completing an attractive synopsis of its culture phenomena. If a particular area should happen to contain two or more distinct peoples or cultures, additional exhibits could be added according to space and needs, rounding out the presentation. If several tribes are included and require separate attention, the less typical may be represented by simple costumed figures instead of by family groups.

It would prove instructive to add to each of these ethnic exhibits illustrations of the physical characteristics of the peoples of the area. These may comprise casts of the face, or even of the entire figure; the skeleton, or parts of it, and especially the skull, which presents wide and significant variations; examples of artificial deformations and mutilations; and collections of such remains of fossil man as are found in the area. This exhibit may also include pictures, diagrams and maps, completing a synopsis of the somatic characters.

The geo-ethnic units, thus described, should be assembled in the museum somewhat as represented in Fig. 1. Here a portion of the ground plan of the exhibition hall is presented. An ordinary, somewhat limited ethnic unit occupies space I of this diagram. The lay

figure group stands at A and the associated exhibits extend across the hall, filling a single row of cases, and the wall cases of the alcoves. A larger unit is provided for in II, where, besides the single family group (A), additional lay figures are introduced around it to represent the less conspicuous peoples. In section III, two minor groups are placed, one on the right and the other on the left of the main aisle, with the family lay-figure groups in front (B C). In many cases the lack of well-rounded collections will necessarily prevent the building of family groups, and, if costumes are at hand, single figures may take their place.

Since these proposed exhibition units are to represent terrestrial areas, it follows that their order in the museum should approximate as nearly as may be the geographical order. If, for example, we are dealing with North America, the most northern group or unit should come first, and the groups to the south follow according to degree of intimacy in geographical relations. In this way neighbouring environments, cultures, and peoples come together, and their interrelations may be presented and studied to advantage.

Assuming that the museum space to be occupied is an ordinary hall or series of halls having a convenient width of say 120 to 150 feet, the several members of each series would be assembled somewhat as shown in the diagram. The lay figure cases (A, A), would be ranged down the centre of the space with wide aisles

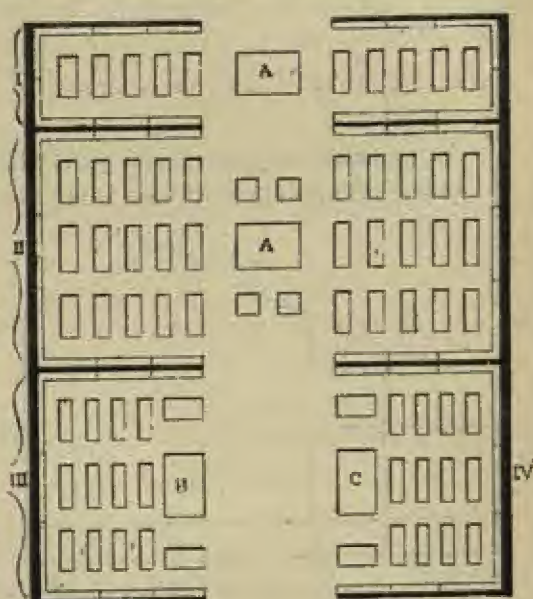


FIG. 1. — Assemblage of geo-ethnic units of different sizes. I. A small unit extending the full width of the hall and occupying a single line of cases; II. A large unit, also extending across the hall and occupying triple tiers of cases; III. A small unit confined to one side of the hall, with two rows of cases; IV. Similar to the preceding, with three tiers of cases. The wall cases in each instance are also utilized.

at right and left, the associated exhibits (*a, b, c, d, e*), coming at the sides in whatever order seems most advantageous, each series extending entirely across the hall, as shown in I and II or otherwise, standing at the sides as indicated in III and IV, where B and C are the family groups facing the main aisle. The order and relative position of the separate exhibits in each exhibition unit should be approximately uniform. The ordinary visitor would thus be able to pass down the central aisles, observing the various peoples as represented by the lay figures, giving slight attention perhaps to the associated exhibits; while the student of a particular branch, as, for example, weapons of war and the chase, could pass from section to section, examining and comparing, in geographical order, the successive exhibits illustrative of this branch. The thing most to be desired, in conducting the visitor through such a great series of exhibits, is to bring the various features before him in logical order, and the suggested arrangement is apparently the best that can be devised.

It frequently happens that a particular ethnic area contains a cultural feature of exceptional importance, which is represented by such a large body of material



FIG. 2.—Section of museum building showing central sky-lighted hall A, with galleries B, and side lighted halls C. This grouping of halls seems well adapted to the great body of anthropologic exhibits.

that to display it in the systematic series would be to throw the whole representation out of symmetry. This exigency would be most happily provided for by arranging the plan and section of the museum building as indicated in

Figs. 2 and 3, while the systematic geographic series are provided for in the main sky-lighted hall (A), and its lateral gallery spaces (B), say 140 feet in total width, lateral tiers of inferior side-lighted halls (C), properly connected by doorways with the main hall, may accommodate the overflow of unusually developed features. This idea would apply most satisfactorily, for example, in the California area, where a great series of basketry products, so prominent a feature of the ethnology of that region, could be installed in one of the lateral halls (C), the systematic exhibit of the area occupying the full width of A. Or again, in the case of the Mississippi Valley area, the great body of archaeological material could be placed in one or more of the side halls in suitable relationship with the central exhibits, which would consist of the systematic ethnic collections of that area.

The floor plan of the installation proposed above appears in Fig. 3. The arrangement of halls suggested is probably the best that can be made for general culture-anthropology exhibits.

It may be asked whether some other arrangement of geo-ethnic or of other simple ethnic units may not afford superior facilities for examining the whole field of anthropological phenomena. If, for example, exhibits illustrating the various groups of peoples in the world should be assembled according to grade of culture rather than with respect to geographical order, the lowest group taking first place and the others following according to culture status, would not the survey of the field be easily and advantageously made? Would one not be able, through this arrangement, employing the lay figure groups and the attendant exhibits as before described, not only to study the peoples and compare their culture to good advantage, but to have in orderly view the full range of culture achievement from lowest to highest the world over? This especial concept is illustrated in Fig. 4, in which, instead of the lineal arrangement, a radiate grouping is suggested. The inner concentric space A could be occupied by the most primitive peoples, the succeeding concentric space B by the next higher peoples, and so on out to the periphery, while the various activities would occupy the radial spaces A, B, C, D. These latter would be few in number toward the centre, where peoples are simple and arts few (a, b, c), and numerous farther out, where peoples are advanced and activities numerous (1, 2, 3, 4). To study a particular people, the visitor would

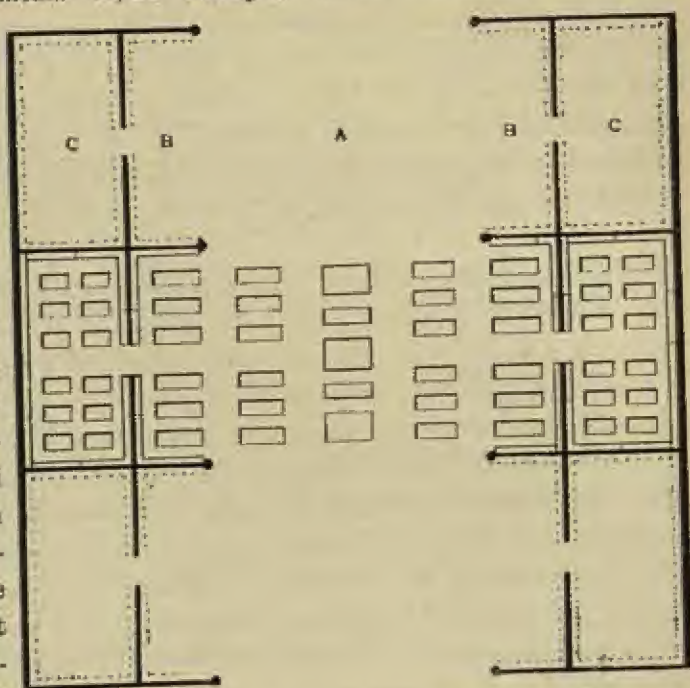


FIG. 3.—Floor plan of extensive geo-ethnic unit showing overflow into lateral halls C, C. One full-sized family group and two auxiliary lay-figure groups are provided for besides a large number of auxiliary exhibits.

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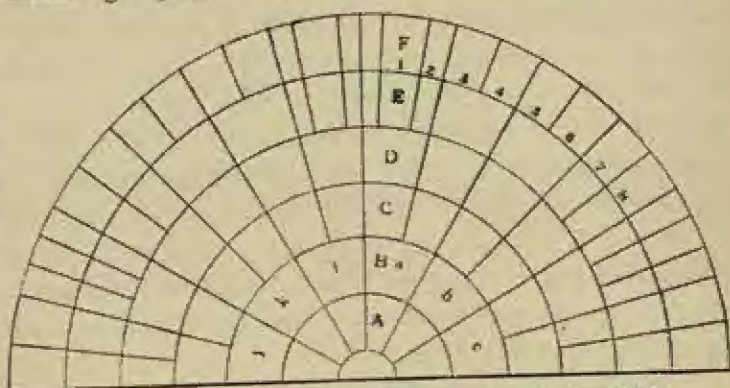


FIG. 4.—Concentric arrangement of entire ethnic exhibit.

would be few in number toward the centre, where peoples are simple and arts few (a, b, c), and numerous farther out, where peoples are advanced and activities numerous (1, 2, 3, 4). To study a particular people, the visitor would

follow the concentric lines (*a, b, c, 1, 2, 3, 4*) examining each of the activities of that people in turn. To study a particular grade of culture the world over he would follow the same plan. To study a particular branch of culture in all its phases, he would pass from centre to circumference, noting what each people had done in that branch (*A, B, C, D*). In doing this he would ascend the culture-ladder from the lowest to the highest round, traversing the full range of human accomplishment in the various activities. At the same time, if the exhibits were numerous and properly arranged, he could form a fair idea of what the race as a whole had accomplished, following the development of culture from beginning to end.

This seems at first glance a most complete and comprehensive scheme; for, fully worked out, it would present the peoples of the world, their activities and history, in a single view. But on closer inspection it is found to have numerous shortcomings, apparently unfitting it for general museum use. (1) In applying it, the important factor of the relations of peoples to one another in the world and to their environment must be disregarded. (2) The question of the order of the ethnic units would be difficult to settle, since many peoples are of one grade or nearly the same grade, while some occupy various grades in part; a tribe or nation may be advanced in one direction or activity, calling for an outer place on that account, and backward in another, calling for an inner place. (3) Such a grouping would be unsatisfactory save where collections are comprehensive and full; besides, (4) a building of unusual design and dimensions would be required. (5) A most serious objection is that this concentric arrangement of a comprehensive exhibit, consisting of thousands of units, would be highly perplexing to any but the trained student, and wholly beyond the grasp of the ordinary visitor. Ninety out of every hundred persons would utterly fail to comprehend the arrangement. On the other hand the straight-away succession of geo-ethnic units seriated according to geographic position (Fig. 1), though necessarily falling short in some minor respects, presents the great advantage of simplicity and directness. Units of all sizes are accommodated with equal facility. If a group is small, a limited space can be assigned; if a group is large, a larger space or even an entire hall may be devoted to it. Comparative studies in the various culture-branches are carried on with reasonable ease, since a particular subject or class of exhibits has, as far as may be, the same relative place in each of the groups. Each culture feature may be studied to best advantage in actual contact with the other features of its own group, that is to say, the pottery of a particular group can better be studied in its own setting of related arts—basketry, sculpture, wood-carving, etc.—than it can if separated from them.

The geo-ethnic assemblage of exhibits is generally applicable and affords many advantages, giving at once to ordinary visitors and to students a comprehensive notion of the peoples of the world and their culture, in their true proportions and relations. It should be the fundamental arrangement in every general anthropological museum.

The culture-history arrangement.

But this is not all that the museum can do to illustrate the history of man. Perhaps the greatest fact of humanity is its evolution. By the geo-ethnic arrangement just described we may amply present the peoples of the world, ancient and modern, and yet fail to convey any definite notion of the development of culture—of the progress of arts and industries, and the gradual unfolding of the human mind. These lessons of evolution may be conveyed by assembling artefacts representing the various activities, and seriating them according to the stage of culture which they happen to represent. These series may be called culture-history or culture-development series, and although they are not true genetic series, since the forms cannot be said to have arisen one out of another, they may in a general way stand for the genetic order, suggesting forcibly the manner in which one step necessarily gave rise to another from the lowest to the highest throughout all culture-history.

These culture-history series may be numerous and extremely varied in character. They may be mere synopses, giving only the great or epoch-making steps of progress, or they may embody many objects brought together from every part of the world. The curator may select only those branches susceptible of ready and effective illustration, the steps of progress being represented by the tools, utensils and devices employed in the practice of the art, or by the products where such exist.

A number of the more important series are included in the list which follows, where they are classified under a dozen or more heads. A majority of these series is now included in the exhibits of the United States National Museum.

In the *first* group are placed all those activities whose function is that of acquiring or producing the raw materials of subsistence or culture:—

1. Plant-gathering, agriculture, horticulture, forestry, etc. Illustrated by the implements and utensils used in (a) collecting; (b) cultivating the soil; (c) harvesting the crops.
2. Hunting and fishing, zooculture. Illustrated by (a) weapons; (b) traps and snares; (c) hooks and tackle; (d) appliances of domestication and culture.
3. Mineral collecting, quarrying and mining. Illustrated by mining implements and machinery.

In the *second* group are included the activities that prepare the raw materials for use, a few of which are as follows:—

1. The building arts. Illustrated by (a) models of the house; (b) models of furniture; (c) models of water craft; (d) models of machinery; (e) devices used in construction.
2. The textile arts. Illustrated by (a) basketry-making appliances, and products; (b) spinning appliances, and products; (c) the loom and loom-products; (d) sewing and netting appliances and products.

3. The sculptural arts. Illustrated by (a) implements for shaping stone, and products; (b) implements for carving wood, and products.
4. The plastic arts. Illustrated by (a) implements for modelling in clay, wax and other plastic substances, and products; (b) utensils and appliances for glass making, and products.
5. The metallurgic arts. Illustrated by (a) metal-reducing appliances; (b) metal-shaping tools and utensils, and products.
6. The graphic arts. Illustrated by (a) drawing and painting; (b) writing; (c) engraving; (d) printing; (e) photography: with appliances and products in each case.
7. Food-preparing arts. Illustrated by (a) contrivances for milling; (b) cooking appliances.

In the *third* group are the arts employing natural forces, as:—

1. The use of light and heat. Illustrated by (a) devices for striking fire; (b) lighting appliances; (c) heating appliances.
2. Use of animal-power. Illustrated by (a) devices for harnessing men; (b) devices for harnessing animals.
3. Use of water-power. Illustrated by (a) the water wheel; (b) the hydraulic engine.
4. Use of wind-power. Illustrated by (a) the sail; (b) the windmill; (c) the kite; (d) the flying machine.
5. Use of steam-power. Illustrated by the steam engine.
6. Use of electric-power. Illustrated by (a) the magnet; (b) telegraphic transmitters, receivers, and insulators; (c) telephone apparatus; (d) the motor.

In the *fourth* group are implements of general use. Illustrated by:—
(a) the hammer; (b) the knife; (c) the scraper; (d) the saw;
(e) the axe; (f) the adze; (g) the drill, etc.

In the *fifth* group are the metric arts:—

1. Counting. Illustrated by tallies and computing devices.
2. Time-keeping. Illustrated by (a) sundials; (b) hour-glasses; (c) watches and clocks; (d) chronographs.
3. Weighing. Illustrated by (a) balance scales; (b) spring scales.
4. Measuring (linear). Illustrated by (a) linear scales; (b) dividers.
5. Surveying. Illustrated by (a) compass; (b) theodolite.

In the *sixth* group are transportation arts:—

1. Land transportation. Illustrated by (a) burden-bearing devices; (b) sliding vehicles; (c) rolling vehicles; (d) wheeled vehicles.
2. Water transportation. Illustrated by (a) the vessel; (b) the sail; (c) the propeller; (d) the rudder.
3. Air transportation. Illustrated by (a) the sail; (b) the balloon; (c) the flying machine.

In the *seventh* group are the arts of war. Illustrated by (a) weapons; (b) armour; (c) fortifications.

In the *eighth* group are alimentary arts:—

1. Eating and drinking. Illustrated by utensils and appliances.
2. Use of nicotine and narcotics. Illustrated by utensils and appliances for smoking, chewing, snuffing.

In the *ninth* group are costume arts. Illustrated by (a) dress; (b) jewellery; (c) tattooing.

In the *tenth* group are diversional arts, a few of which can be illustrated:—

1. Games of skill, ball, etc.
2. Games of chance, playing cards, etc.
3. Toys, dolls, etc.

In addition, other groups may be mentioned as follows:—

Eleventh, the art of music. Illustrated by musical instruments.

Twelfth, religious and other ceremonials. Illustrated by idols, symbols, and paraphernalia.

Thirteenth, arts of commerce. Illustrated by coins and other forms of money.

Fourteenth, pathological arts. Illustrated by devices employed in medical practice and surgery.

These series may, when properly selected and arranged, afford striking and easily understood illustrations of the history of culture as recorded in material things. Some of the branches are of primordial origin, covering the whole range of progress, such as building, weaving and arts of adornment; while others have arisen in recent times, such as printing, photography, the use of steam, electricity, etc.; but all alike furnish faithful records of the intellectual evolution of humanity.

The degree of elaboration in any branch of the exhibits must depend on the space available and on the materials at hand. A few specimens may form a most instructive synopsis, emphasizing the great steps of progress; while, on the other hand, a single branch may embody extensive series of objects, as is well illustrated in the collections of the Pitt-Rivers Museum, Oxford, where every available form of artefact is exhibited, covering not only the full range from lowest to highest, but indicating the forms peculiar to distinct peoples.

These series of exhibits, arranged to illustrate the development of culture in general, do not relate to any particular people or area, but represent all peoples and all areas. They cannot, therefore, be installed in direct association with the geo-ethnic series, but must occupy a separate space in the museum.

Special culture series.

Two great classes of culture exhibits have now been described. First, the *geo-ethnic* series illustrating groups of men and their works assembled by geographical areas; and second, the *culture-history* series illustrating the achievements of the race in various important branches of activity. Now it happens that there are numerous subjects worthy of museum-illustration, that cannot be presented in either of these series of exhibits without confusion; and these, therefore, call for independent or isolated installation. It is proposed to group them under the head of *special* exhibits, and they may be as numerous and varied as we choose. Some of them may cover limited portions of the culture field, while others are general, comprehending a wide range. They may be classified and arranged in various ways according to the nature of the concept to be developed; some may be chronologic, some comparative, others cyclopedic, and so on. A national exhibit, that is so say, one intended to illustrate the history of a nation, may be arranged chronologically as in the historical exhibit of our National Museum. Here the successive periods, marked by important episodes are as follows:—1. Discovery; 2. Colonization; 3. Revolution; 4. War of 1812; 5. Mexican War; 6. Civil War; 7. War with Spain, etc. Within this series, and forming part of it, are special exhibits, as those representing public personages. In the section illustrating the revolutionary period, for example, there is a minor exhibit, relating to Washington, and consisting of various articles, personal and otherwise, arranged for effect or according to relative importance of the relics. This national exhibit is not a true *geo-ethnic* unit, since it covers only three or four centuries of the ethnic history of the area included, and, although arranged chronologically, it is not illustrative of the history of culture in the wider sense.

A collection of paintings is susceptible of varied special treatment. It may be arranged (1) chronologically; (2) by countries; (3) by schools; or (4) by painters. An exhibit of book-bindings might represent the work of (1) an individual; (2) a firm; (3) a school; (4) a period; and so on.

Special comparative exhibits may be of much interest and value. They may be synoptical or cyclopedic. An exhibit of bows and arrows, for example, may be synoptic, containing only typical examples from the various regions and peoples, or cyclopedic, containing all available specimens from all sources.

The culture exhibits for a museum of anthropology may thus best be assembled in at least three distinct divisions, each illustrating a different kind of unit of culture and serving to convey distinct classes of information, or the same kind of information in different ways. So the museum space allotted to culture is separated into three parts, accommodating the *geo-ethnic* groups, the *culture-history* series, and the *special* exhibits.

Geo-ethnic grouping illustrated.

The significance of the *geo-ethnic* exhibits already described will be readily understood by referring to a map of North America (Fig. 5) on which are outlined

in the most general way some of the principal geo-ethnic or geographical culture districts—the characterization-areas of the continent. These areas are not always well defined, and there is a good deal of overlapping and ethnic intermingling. In some cases it is difficult to say of a particular area which tribe should be taken as a type, and the materials at hand must decide this, since only those tribes can be systematically shown from which collections are ample. In the main, however, the delimitations are sufficiently definite for all practical purposes. The areas which suggest themselves are as follows:—



FIG. 5.—Map of North America illustrating in a general way the ethnic provinces.

- I. Eastern Arctic area (Eastern Eskimo).
- II. Western Arctic area (Western Eskimo).
- III. McKenzie-Yukon area (Tinneh).
- IV. North-west coast area (Tlinkit, Saliah).
- V. Columbia River area (Nez Percé, Chinook).
- VI. California area (Klamath, Tulare).
- VII. Great Basin area (Bannock, Uta).
- VIII. Colorado-Rio Grande arid area (Pueblo, Apache).
- IX. Great Plains area (Blackfoot, Kiowa).
- X. Great Lakes and North Atlantic area (Chippewa, Iroquois).
- XI. South Atlantic and Gulf area (Seminole, Choctaw).
- XII. Arkansas-Texas area (Wichita, Caddo).
- XIII. North-east Mexico and Rio Grande area.
- XIV. Sonoran area (Mojave, Huichol).
- XV. South Mexican area (Zapotec, Otomi).
- XVI. South Mexican area (Zapotec, Miztec).
- XVII. Yucatan-Guatemalan area (Maya, Maya-Quicha).
- XVIII. Costa-Rican Isthmian area (Mosquito, Chibcha).
- XIX. West Indian area (Carib, Arawak).

In all these cases we deal exclusively with the native ethnology, as the superposed European culture is too widely distributed to be treated by limited districts, and transportation from region to region is now so easy that a particular or peculiar environment is no longer capable of impressing its stamp upon its people and art. Modern culture has to be treated by artificial, not natural, areas, and is becoming so generalized that distinctions of art are disappearing, and we must illustrate it, if we illustrate it at all, in one cosmopolitan group. But let us see what these culture-areas mean.

It must have been an untoward chain of circumstances that drove the Eskimo peoples into the frozen zone (Fig. 5, areas I and II) occupied by them; for at first glance it would seem that human creatures could not survive even for a year in such an environment; but they found means of living, and withal are a healthy and energetic people. But their culture is necessarily very circumscribed and exceptional, developed as it was in, or modified by, the peculiar surroundings. These people necessarily have clothing, but as the garments are of skins and furs, the textile art is almost unknown. They must also have fire, but their fuel is oil. They venture out in boats to capture the seal, but, as they have little wood, their boats are made of skins, and are distinct from the boats of other groups. They travel by land also, but their vehicles are on runners, and made of driftwood and bone. They hunt game, but as this consists largely of marine animals, they have invented peculiar weapons and appliances. They build houses, but these are unlike those of any other climate in the world, being often made of whale's bones or of frozen snow. They carve curious figures in ivory, bone, and wood, but these have no parallel among other peoples. They have no pottery, because the climate is not favourable to its development, but also largely because they do not cook their food. Notwithstanding their most dreary and inhospitable surroundings, they are a clever people, and invent and use the most cunning traps, snares, and weapons in the world. They are a cheerful people, and enjoy existence in their way, as keenly perhaps as the more favourably situated peoples.

Can the culture phenomena of any other region or climate be as peculiar and remarkable as this? Strange to say, this is not a rare instance of individuality in culture development and characteristics. Take the area marked IV on the map and note what strange contrasts occur. Area I has no wood, but in area IV wood abounds; there the great cedar and the shapely spruce grow and the ingenious tribes of Indians have used them extensively. So important a feature of this environment are they that the culture phenomena—the arts—are largely regulated by them. The people go to sea in boats, but they are not boats of skin, they are made of the noble spruce trunk, and the stable craft are well shaped and beautifully carved and painted. The people live in houses, but these are not of snow or whale bones, but of wood of the hemlock. Their houses are also works of art, with carved and painted ornaments and supplemented by wonderful totem poles sculptured in the most fanciful forms. The hemlock and

the spruce have made these peoples a race of builders and sculptors. They do not wear skins exclusively, but have woven garments, because the cedar bark and the wool of the mountain goat make the textile art easy. They do not make pottery, but they carve the yellow spruce into wonderful vessels, spoons, and chests, and they have transferred their skill in carving to stone, and now are veritable sculptors, made so because the forest trees of this particular environment dictated the lines in which many features of their culture should grow.

It is unnecessary to go further into details, as the reasons are clear for assembling our ethnical collections by geographical areas, and it only remains to indicate in some detail how these collections are to be grouped and displayed in the museum.

In the accompanying diagram (Fig. 6) we have a scheme for arranging one of the geo-ethnic units. The area selected is that of the Eastern Eskimo (area I on the map). In the centre of the exhibition hall we place the group of life-size figures (Fig. 6, A), showing how the people look, and as far as possible, what they think and do and have. This is the key to the exhibit, the most essential idea, the feature from which the most casual observer can get a definite conception of the people and their culture. The particular episode depicted in the group, shown in Fig. 7, was selected for the purpose of illustrating, amongst

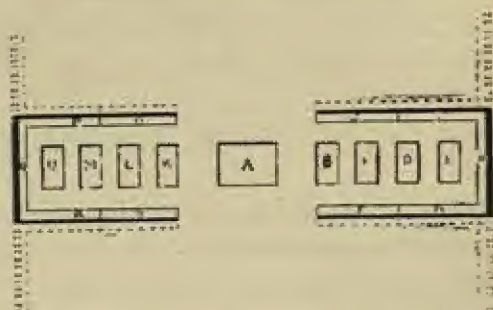


FIG. 6.—Geo-ethnic unit. A, lay-figure group, case 8 by 12 feet (Fig. 7); B, house models; C, boat models; D, sledge models, harness, snow shoes, etc.

other things, the cheerful disposition of these farthest-north people. Then ranged around this group should be cases containing everything that will serve to indicate more fully and accurately the nature of their activities and culture. Case B should contain models of the various forms of dwellings—the snow house, the earth-covered hut, and the improvised shelter, with all varieties of attendant structures; Case C, models of their boats, while actual examples may be placed near at hand if space permits; Case D, their sledges, snow-shoes, etc., the sledges represented mainly by small-scale models; Case E, their hunting weapons, traps, and snares; Case F, their fishing implements and apparatus; Case G, their knives and other tools of general use; Case H, their lamps; Case I, their carvings and graphic art; Case J, their clothing and personal ornaments in detail; Case K, their toys, dolls, and masks; and so on. A reasonable space should be devoted to crania, casts from life, and pictures showing physical characters. Such archaeological material as pertains to the region should also be shown. In cases where there are striking distinctions between the northern, central, and Labrador groups of these Eskimo, duplicate exhibits should be installed, and separate lay figures of men, women, and children prepared to illustrate important variations in physique and costume. The



FIG. 7.—Family group of Smith's Sound Eskimo.

manner of arranging the specimens of the several exhibits in their cases is necessarily much varied, and it does not seem advisable to enter further into the details in this place.

The labels required in this ethnic unit are as follows:—(a) A *Sign*, about 12 by 24 inches, to be suspended above the exhibit, serving to correlate it with the associated units in the museum series;

(a)

Aborigines of North America.
The Eskimo.

(b) *Case label*, about 5 or 16 inches, to be framed and placed on or immediately above each case, to designate its contents in a general way, and expressive of the broadest classification. The case label for the family-group is as follows:—

(b)

The Eastern Eskimo.
Family Group of Smith's Sound.

(c) *Descriptive label*, about 8 by 10 inches, two copies to be framed and hung in each exhibition case near the level of the eye. That for the family-group (Fig. 7) is as follows:—

**FAMILY GROUP OF THE SMITH SOUND ESKIMO.
TYPE OF THE EASTERN ARCTIC REGION.**

This exhibit shows an Eskimo family of Smith Sound, in north-western Greenland. The Smith Sound Eskimos are called the Arctic Highlanders, and are the most northern people in the known world. On account of the prevalence of ice, they do not have the *kaiak*, or skin canoe, but use the dog sled for transportation. Their clothing is from skins of seal, reindeer, birds, and dogs, and their houses are of snow. Nearly all of their activities are associated with the struggle for existence, and little attention is given to art work.



This group represents the family as it might appear in the spring, moving across the ice fields. The young man has succeeded in clubbing a small seal, and the others are having a laugh at his expense for calling on the dog team to haul it home when he could have carried it on his back. It is remarkable that these farthest north people are exceptionally cheerful in disposition, notwithstanding the rigor of the climate and the hardships of their life. The woman who carries a babe in her hood is about to help attach the seal to the sledge; and the girl, who plays with the dogs, and the boy, who clings to the back of the sledge, enjoy the confusion of the young hunter.

Designed by W. H. HOLMES; modelled by H. J. ELLICOTT.

Beside the case label and the general descriptive label, which go with each exhibit, referring to it as a whole, all save the family-group require labels for the individual specimens. One example of these *specimen labels*, taken from the dwelling-group series, may be given:—

**DWELLING GROUP OF THE CENTRAL ESKIMO.
TYPE OF THE ARCTIC REGION.**



The Central Eskimo live on the area between Hudson Strait and Baffin Bay. Their winter houses are built of blocks of snow laid up in a spiral manner, forming a dome. The blocks are about three feet long, two feet high, and six inches thick. The main chamber of the house varies from five to twelve feet in height, and from seven to fifteen feet in diameter. Over the entrance a square is cut out and covered with seal intestine for a window. The dome is connected by passage-ways with one or more out-buildings or packing rooms. In the summer the natives fish in the open water; in winter seals are taken by nets set under the ice. Dogs are attached to the sled by separate lines. The clothing of the men and women is made from skins of seal and deer, and consists of outside and inside trousers; jackets, those of the women having hoods; boots, and inside boots or socks made of light deer-skin or bird-skin.

This group forms one of a series designed to set forth the dwellings and home life of native tribes in the Western Hemisphere.

Culture-history series illustrated.

The nature of the *geo-ethnic* or *specialization-area* assemblage of the culture materials of the world has been sufficiently shown in the preceding pages. It is the first and most important method for a general museum. It remains now to explain briefly the nature of the *culture-history* installation, a partial list of the available exhibition units of this class having already been given.

In Fig. 8 we have a scheme for placing and labelling a series of exhibits illustrating progressive steps in the art of sculpture. The other series are to be treated in like manner. This art began very early in the career of the race and in forms so simple that they would not at first be recognized as belonging to the art of sculpture by the unscientific student. We are able to trace it more fully

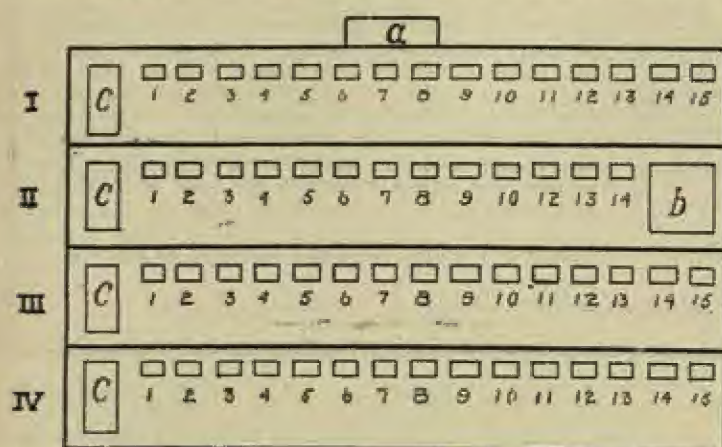


FIG. 8.—Arrangement of a synoptic exhibit illustrating the history of sculpture as elaborated in the U.S. National Museum. I. Series of tools and appliances; II. Series of aboriginal American sculptures; III. Series of oriental sculptures; IV. Series of Mediterranean sculptures. *a*, case label; *b*, general descriptive label; *c*, *c*, *c*, *c*, series label. 1, 2, 3, 4, etc., specimen labels.

than any other art, because its products are in stone, which is not seriously affected by lapse of time. Then, again, the tribes and nations of to-day are found to be practising every known step in the art from the most elementary to the most highly perfected; so that its whole history comes well within the

range of present observation, and examples of the tools and the work are available. The first conscious step in the art was probably that of fracturing one flinty stone with another with the view of securing a sharp edge for cutting and scraping. Three other processes that must have come early into use are those of shaping by pecking, by grinding, and by cutting, and for a long period of human progress the only sculpture consisted of shaping useful implements by these methods. Even to-day these are the processes used, the tools and appliances being simple with primitive people and more highly developed among cultured nations. Mechanical aids of considerable complexity are sometimes employed by our modern sculptors.

The first group of exhibits illustrating the history of the art may well consist of a progressive series of the shaping implements and devices, while two or more additional series may show the sculptured products.

In the first stages of the art only simple useful articles were made; later these were elaborated aesthetically, and personal ornaments were added; then

gradually the processes were applied to working out the rude, block-like, imperfectly-proportioned figures of animals and men; these were totems, fetiches, and idols, and illustrate a third stage in our progressive series. Later still, portraiture was attempted, and a kind of rigid formal likeness was worked out, marking a fourth step. Then with the higher nations, correct form and expression came into being, and finally the realistic and ideal work represented by the highest Greek art was developed. Exhibits illustrating the more advanced phases should embody originals of the smaller objects and small-scale reproductions of the larger. If collections are ample, it will prove interesting to treat the development of the art in each continent or great cultural province separately, as indicated in Fig. 8, thus affording facilities for interesting comparative studies. America may furnish one series of exhibits in which the course of development through the several primitive grades up to the stage of well relieved figures and rude portraiture is traced (16 numbers). The Orient may afford a series somewhat more complete (18 numbers), and the Mediterranean province yields illustrations covering the same ground and besides furnishes additional steps up to the highest achievements of human genius in this art (20 numbers).

Four kinds of labels are required for the sculpture exhibit as follows:—

- (a) *Case label*, about 4 by 16 inches; framed and placed at the top of the case (a, Fig. 8).

History of the Arts and Industries.

Synopsis of the Art of Sculpture.

- (b) *Group label*, descriptive of the entire exhibit; size about 8 by 10 inches; framed and hung at a suitable height within the case (b, Fig. 8).

HISTORY OF SCULPTURE.

The term sculpture is here applied to the whole range of processes and products pertaining to the shaping of stone, but does not extend to the carving of wood, bone, ivory, or other like substances, the modelling of plastic materials, or the shaping of metals. The products of the art, briefly epitomized in this exhibit, constitute a most important record of human progress, for they tell not only a story of technical and industrial development, but throw many side lights upon the history of religion, æsthetics and general culture. It is observed that with very primitive peoples the shaped forms are implements and utensils merely, but that with advancing culture ornaments are made and life forms gradually appear, and that in civilization realistic and ideal phases of the art are dominant.

In this exhibit we have to deal with two classes of artefacts; first, the implements and appliances used; and second, the shaped product. The shaping processes include flaking, pecking, cutting and grinding in their various forms, and the implements and devices used are in the main extremely simple, even in the advanced stages of the art. The implements are arranged in progressive order in Series 1, and the sculptured product in some of its varied phases, in Series 2, 3, and 4. Series 2 indicates the range of native American work; Series 3, the sculpture of the Orient; and Series 4, the full range of the art as developed on the shores of the Mediterranean.

- (c) *Series label*, to be placed at the beginning of each series. The following example pertains to series II of the sculpture exhibit (C, Fig. 8):—

Series II.—ABORIGINAL AMERICAN SCULPTURE.

The American tribes displayed a strong predilection for sculpture. They shaped their stone implements with great skill, and delighted in representing animal forms. Religious motives inspired most of the more elaborate work, although æsthetic appreciation was not wanting.

The series of objects here presented covers nearly the full range of native achievement, although the best examples shown fall short of the highest types of Aztec and Maya work. The simpler forms are placed at the left, and a series of progressive steps lead up to the higher forms at the right. It is believed by some that germs of culture have occasionally reached America from other lands, and that sculpture on this continent is not wholly of native growth.

The practice of the art in its higher forms has, for the most part, been abandoned by the native tribes, but stone implements and utensils are still made in some remote districts.

- (d) *Specimen label*, briefly describing the specimen, and placed with it in each instance. The following examples belong to specimens 13 and 14 of the American Series (II, Fig. 8), as installed in the National Museum:—

No. 13.—Human and animal figures combined in a miniature totem-pole, sculptured in partial relief. Material, black slate. Shaped with metal tools. Northwest Coast Indians. Period recent. 178,064

No. 14.—Human figure, fully relieved, but falling short of the best Central American work. Material, gray, porous lava. Probably shaped with stone tools. Precolumbian period. 61,814

SUMMARY.

The ends to be subserved by the exhibits of a general anthropological museum are mainly those of education, and the aim of the classification and arrangement here proposed is to so present the collections that the student as well as the ordinary museum visitor may secure the maximum benefit from them. As indicated at length in the preceding pages, the three great ideas capable of satisfactory presentation are: (1) the biology of the race—the origin, evolution and present characteristics of physical man; (2) the ethnology of the race—the various groups of people and their culture; (3) the history of culture—the evolution of arts and industries. To these three series, a fourth is added, which consists of various special exhibits, each teaching its individual lesson. The anthropological collections are thus assembled in four grand divisions separately installed.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN; ITS
CLOSE ANALOGIES ON THE RHINE; ITS PROBABLE ORIGIN
IN CENTRAL EUROPE.

BY THE HON. J. ABERCROMBY.

[PRESENTED NOVEMBER 25TH, 1902. WITH PLATES XXIV-XXXVII.]

ABBREVIATIONS.

<i>A.S.I.</i>	= <i>Ancient Stone Implements of Great Britain.</i> By Sir John Evans. 2nd edition, 1897.
<i>Ar.</i>	= <i>Archæologia.</i>
<i>Ar. J.</i>	= <i>Archæological Journal.</i>
<i>A. W.</i>	= <i>Ancient Wilts.</i> By Sir Richard Hoare, 1812.
Bateman, 10 <i>Y.D.</i>	= <i>Ten Years' Diggings....in the counties of Derby, Stafford and York from 1848-1858.</i>
Bateman, <i>Vest.</i>	= <i>Vestiges of the Antiquities of Derbyshire, etc.</i> By Bateman and Glover. 1848.
<i>B.B.</i>	= <i>British Barrows.</i> By Wm. Greenwell, M.A. 1877.
<i>Cr. Br.</i>	= <i>Crania Britannica.</i> By Drs. Thurnam and Davis. 1856.
<i>Č.P.</i>	= <i>Čechy Predhistorické.</i> By Dr. J. L. Píš. 1899.
<i>G.G.</i>	= <i>Gravhøje og Gravfund, Pl. X, 99.</i> By Madsen. 1896.
Götze, <i>G.u.O.</i>	= <i>Die Gefäßformen u. Ornamente d. neolith. schurverzirt. Keramik im Flussgebiete d. Saale.</i> By Dr. A. Götze. 1891.
Montelius, <i>Ch. B.Z.</i>	= <i>Die Chronologie d. alt. Bronzezeit.</i> 1900.
<i>P.S.A.L.</i>	= <i>Proc. Society of Antiq. of London.</i>
<i>P.S.A.S.</i>	= <i>Proc. Society of Antiq. of Scotland.</i>
<i>S.P.T. b & s.</i>	= <i>Scotland in Pagan Times: Bronze and Stone Ages.</i> By Dr. Joseph Anderson. 1886.
<i>V.F.G.M.</i>	= <i>Vorgeschicht. Funde aus d. Grafschaft Mansfeld.</i> By Dr. Grössler. 1898.
<i>W.A.M.</i>	= <i>Wilts Archæolog. Magazine.</i>
<i>Z.E.</i>	= <i>Zeitschrift für Ethnologie.</i>
No.	followed by a number refers to a beaker.
Fig. " " "	ornament.

I

As about a century has elapsed since Sir Richard Hoare laid the foundations of archæology in this country by the systematic excavation of ancient tumuli in Wilts, and as in that space of time a considerable body of prehistoric pottery has accumulated in our museums, the time has arrived when some attempt should be made to arrange this early ceramic in approximately chronological order. Hitherto hardly anything has been done in this direction. Thirty-one years ago the late

Dr. Thurnam did inestimable service to this branch of archæology by his remarkable monograph on "British Fictile Vessels."¹ But his object was first to classify the material with reference to interment by cremation or inhumation and then to describe the chief typical forms proper to each class, rather than to explain how each class and type arose in order of time. He began with vessels of cinerary types, and finished with "food-vessels" and "drinking cups," thereby leading the reader to suppose that he held the former to be first in order of time, especially as he distinctly assigned a very late date to the "drinking cup."

Canon Greenwell in his introduction to *British Barrows* written five-and-twenty years ago, also describes the cinerary urns first, though he considers it a well-established fact that cremation and inhumation were contemporary methods of interment, and he was of opinion the round barrows "belong to a period which centres more or less in B.C. 500."²

Before proceeding further I propose to substitute for the double-barrelled name "drinking cup," the compacter term "beaker," defined in Dr. Murray's new dictionary as "a large drinking vessel with a wide mouth, an open cup or goblet." It has also the advantage of corresponding in form with the Swedish *bägare*, Danish *bæger*, and German *Becher*, words that are used to designate a class of vessel very similar to our "drinking cup" by the archæologists of Germany and Scandinavia.

Since the investigations of Rolleston, Thurnam, and Davis, it is generally agreed that the introduction of bronze into Britain coincided with the advent of a people of a new stock, distinguished from the older neolithic inhabitants by taller stature and a moderately brachycephalous head. Here I take it for granted that they interpreted correctly the evidence upon which they founded their statements to this effect. As beakers have sometimes been found with brachycephalous skeletons it is clear that the new-comers brought with them from the continent a new type of vessel, very different from any neolithic pottery as yet found in Britain. It must certainly be a matter of the greatest interest to the archæologist and the ethnologist to be able to trace, as I propose to do, this type of ceramic art across the Channel, and thus to ascertain from what quarter the new stock of immigrants came. If it is asked how we know that the new tribes that introduced the beaker into Britain entered it at the beginning of the Bronze period and not at the end of the neolithic age, the answer is that the difference of form and ornament between a beaker like No. 2 and Nos. 1, 6, 14, is not sufficiently great to lead us to suppose that any great interval of time separates them. Bronze no doubt was rare but it was in use.

I believe that the recorded finds of the last hundred years are sufficient to establish the fact that the beaker is the oldest form of fictilia in the Bronze Age of this country, and I will shortly lay before the reader the proofs of this conviction. Its importance is great; for once accepted as an undeniable fact it throws on the

¹ *Ar.*, vol. 43.

² *B.B.*, p. 131.

early history of Britain a ray of light, which may penetrate to about 1500 B.C. or even earlier. From the time of the introduction of the new ceramic, which has its tap-roots in the neolithic period on the Continent, we can trace on the whole a gradual degeneration of form and manufacture, though often coupled with increased development of ornament. During the earlier part of the period we are able to watch the introduction of cremation, while in the later part of it we see the beaker being gradually supplanted by a totally new type of vessel, though this too was a concomitant of interment with inhumation. Before these changes could be accomplished the lapse of several centuries may well be postulated. If we could see good photographs of all known examples of the beaker and of the ornament that envelopes them, we should be able to form an opinion as to the artistic tendencies of the new people when left to itself, and from the art thus revealed various deductions of an interesting nature might be made. In the limited space at my disposal it is impossible to exhibit so many photographs, though those about to be presented form about a fifth of the total number known to exist in Great Britain.

Before doing so, however, it is necessary to give a brief description of the types into which Thurnam divided this class of fictilia. For though he was undoubtedly mistaken in supposing that beakers were in use at a time when Roman culture could act upon them, even indirectly, his classification of them is excellent. He recognized three types and distinguished them as *a*, *β*, *γ*, chiefly by the character of the brim or neck.

"*a*. High-brimmed globose cup.

"*β*. Ovoid cup with recurved rim.

"*γ*. Low-brimmed cup.

"*a*. The body or lower part is more or less globular; the upper part separated from the lower by a constriction, frequently very defined, spreads out like the calix of a flower and forms a brim that almost equals the lower part in height. The sides of this brim, whether more or less erect or sloping, are straight and not recurved at the lip. The ornament is profuse and elaborate. This is the prevailing type in South Britain to which four-fifths probably of known examples belong.

"*β*. In this type there is no distinct demarcation between the body of the cup and the brim, but one glides into the other by a gradual curve. The brim is of slight elevation and in the Wilts examples is curved outwards at the lip. The body instead of being globular is oval. More attention seems paid to the fabric than to the decoration. The walls are thinner than in any other variety of British fictile vessel and as they have been well fired, the colour is red, almost as bright as that of Samian ware. In general the ornament is simple and confined to horizontal bands, in lines, dots, and chevrons, alternating with plain bands. As a type it is relatively rare.

"*γ*. This may be regarded as a debased variety of our first type and prevails in Scotland and Northumberland, north of the Roman Wall"¹

¹ *Ar.*, vol. 43, pp. 391-4.

The great importance of Thurnam's classification consists in his separation of the types α and β , for I shall attempt to show later on that these must have a different secondary origin and that the differences between them in form and ornament did not arise in this country.

Type α will best be understood by the photographic illustrations (Pl. XXV, XXVI). The ornament, however, will be taken separately when all three types have been made familiar to the reader.

No. 1 from barrow 39, Stonehenge, Wilts, is $8\frac{1}{2}$ inches high (216 mm.) and now in the Devizes Museum. It was found with a fine flint dagger measuring $7\frac{1}{2}$ inches by $2\frac{1}{4}$ inches (270 by 54 mm.) of the same type as one figured by Sir John Evans.¹

No. 2 from barrow 93, Durrington, Wilts, measures $7\frac{1}{2}$ inches (191 mm.) in height, and is now in the Devizes Museum. It was found with the primary interment, but no other details are given.² In connection with this may be mentioned what is probably a contemporary beaker of the same height, though less globular below, also ornamented round the neck with a row of saltires, separated by narrow vertical bands. It was found by Sir R. Hoare under a small barrow at East Kennet, Wilts, in a grave 5 feet (1.52 m.) deep. With it was a beautiful perforated axe of limestone and a flat bronze dagger $5\frac{1}{2}$ inches long (140 mm.) and $2\frac{3}{8}$ inches wide (58.6 mm.) provided with three rivets.³ The beaker and dagger are figured by Thurnam,⁴ but where they now are I have not been able to discover.

No. 3 from barrow 5, Winterbourn Stoke, Wilts, is only $5\frac{3}{4}$ inches (145 mm.) high, and now in the Devizes Museum. It was found in a large barrow in a large grave 5 feet deep (1.52 m.), at the foot of a skeleton. With it was a "pulley ring" and a large, round jet button $1\frac{1}{2}$ inches in diameter (38 mm.).⁵

No. 4 from barrow 36, Stonehenge, measures $7\frac{3}{4}$ inches (197 mm.) in height and is now in the Devizes Museum. It was found at a depth of 6 feet (1.82 m.) below the natural surface,⁶ which is enough to show that the interment belongs to an early period, though nothing accompanied it but a skeleton.

No. 5 from Longbarrow 170, Wilsford Down, Wilts, is 8 inches high (203 mm.) and now in the British Museum. Under what circumstances it was found I do not know, but in form and ornament it so greatly resembles two beakers found together in a cist at Winterbourn Monkton, North Wilts, that they must belong to the same period of time. The pair of beakers are figured by Thurnam and Davis,⁷ and were found with a finely chipped, recurved flint knife $3\frac{1}{2}$ inches (89 mm.) long; two large and one small jet button, the largest being almost 3 inches (76 mm.) in diameter, with a V-shaped perforation at the base; and a so-called jet "pulley-ring," ornamented with fine raised lines. A shale "pulley ring" was found by Sir R. Hoare under a large sarsen stone near

¹ *J.S.I.*, p. 349, Fig. 264.

² *Id.*, xxiv, pp. 28, 29.

³ *A.W.*, 118.

⁴ *A.W.*, 108, Pl. XVIII.

⁵ *Id.*, vol. 43, Figs. 83, 156.

⁶ *A.W.*, 163.

⁷ *Cr. Br.*, ii, p. 58 (2).

Durrington Walls with a flint dagger $6\frac{1}{2}$ inches (165 mm.) long by $1\frac{3}{4}$ inches (445 mm.) wide; a whetstone; a conical jet button with the V-shaped perforation and two small discs of flint.¹ This makes it probable that No. 5 belongs to the earlier part of the bronze-age, though the curvature of the lower part is already becoming flattened. A "pulley ring" from Yorkshire is figured by Canon Greenwell and Sir J. Evans.²

No. 6 from barrow 37, Garton Slack, East Riding, is now in Mr. Mortimer's museum at Driffield, Yorkshire. It was found at the centre of the barrow, about 1 foot below the natural level and with it was a very fine flint dagger 7 inches long (178 mm.), and a perforated axe-hammer.

No. 7 from Seven Barrows, Lambourn Down, Berks., is $7\frac{3}{4}$ inches high (197 mm.) and now in the British Museum. From the similarity of its ornamentation with that of No. 1 it is possibly of the same age, but, for reasons to be shown in the sequel, it represents, I believe, the original type *a* better than No. 1. Among the objects sent to the British Museum with this beaker as having been excavated at Seven Barrows is a fine flint dagger figured by Sir John Evans,³ several beautiful flint arrowheads and some very small bronze knives. It is not impossible, though not certain, that the flint dagger accompanied No. 7.

No. 8 from a long barrow at Figheldean, Wilts, is $7\frac{1}{4}$ inches (185 mm.) high, and now at the British Museum. It was found with a secondary interment,⁴ but is interesting for its ornament, and does not appear to be later than No. 3 for instance.

No. 9 from a barrow on Haddon Field, near Bakewell, Derbyshire, is $6\frac{1}{2}$ inches (165 mm.) high, and preserved in the Sheffield Museum. At the centre, under a cairn of large stones lay the only interment, a few inches above the natural surface of the rock. At the back of the skeleton was this beaker, a partly incinerated flint arrowhead, a small bronze awl with the remains of its wooden handle, and a "mesh-rule" of deer's horn, $6\frac{1}{4}$ inches (159 mm.) long and rounded at the ends. The cephalic index of the skull is 79.2.⁵

No. 10 from a large barrow at Castern, near Wetton, Staffordshire, is $8\frac{3}{4}$ inches (223 mm.) high, and now in the Sheffield Museum. The barrow was 8 feet (2.432 m.) high, and under it was a square grave cut out of the rock, the bottom being lined with stiff clay. The skeleton had a cephalic index of 85.6 and belonged to a person above the middle height.⁶

No. 11 from a small barrow at Dowel, near Sterndale, Derbyshire, is $6\frac{3}{4}$ inches (171 mm.) high, and now in the Sheffield Museum. The grave was cut 3 feet (912 mm.) into the sandstone rock, and was filled with grit stones. At the bottom lay a skeleton, this beaker, a conical jet button with the V-shaped perforation, and two flints, one of them an arrow-point.⁷

¹ *A.W.*, 172.

² *A.S.I.*, Fig. 264.

³ Bateman, 10 *F.D.*, 106.

⁴ Bateman, 10 *F.D.*, 38.

⁵ *B.B.*, Fig. 123; *A.S.I.*, Fig. 372.

⁶ *Ar.*, vol. 42, p. 107.

⁷ Bateman, *Vest.*, 87, 88.

No. 12 from a barrow at Bee Low, Youlgreave, Derbyshire, is $6\frac{1}{2}$ inches (165 mm.) high, and preserved in the Sheffield Museum. Some 9 feet or 10 feet (2.736 to 3.040 m.) from the centre was an irregular grave cut in the rock, the bottom of which was $4\frac{1}{2}$ feet (1.368 m.) below the surface of the barrow and paved with chert stones. It contained the skeleton of a young person with a cephalic index of 73.3. Near the knees lay this beaker, and close to it a very fine instrument of white flint over 4 inches (101.1 mm.) long, which may have been a saw or a knife.¹

No. 13 from Smerril Moor, Derbyshire, is nearly 9 inches high (228 mm.). It was found in a large irregular grave 5 feet (1.52 m.) deep, under a small tumulus, surrounded by an irregular circle of large stones. The grave was coated with stiff clay and filled with stones. At the bottom was the skeleton of a tall young man. Behind the pelvis lay this beaker, a bone netting-rule 12 inches long (304 mm.); a flint dagger $4\frac{3}{4}$ inches long (121 mm.), a flint spear-head 3 inches long (76 mm.)—both of these are now lost—and four other flint implements.² The beaker is now in the Sheffield Museum.

No. 14 from Green Low, Alsop Moor, Derbyshire, is $7\frac{3}{4}$ inches high (197 mm.). The barrow was heaped up over a rocky uneven surface in which a hole had been cut to serve as a cist. At the bottom was a male skeleton. Behind the shoulders lay this beaker; a piece of spherical pyrites; a flint implement with a circular head and a splendid flint dagger 6 inches long (152 mm.). Lower down were three barbed arrowheads, beautifully chipped, and seven other flint implements of inferior work; three bone instruments, neatly rounded at one end, much like a mesh-rule for netting. Near the pelvis lay the remains of an infant and across the pelvis a bone pin. All the flints had undergone the action of fire.³ The beaker is now in the Sheffield Museum.

No. 15 from a barrow at Mouse Low between Deepdale and Grindon, Staffordshire, is $8\frac{1}{4}$ inches (210 mm.) high, and now at the Sheffield Museum. At the centre of the barrow was a cist of three large stones containing the skeleton of a very large, strongly built man, having a cephalic index of 78.7. Near the head were four beautifully barbed flint arrowheads; a rudely chipped spearhead and a roughly circular flint implement.⁴

No. 16 from barrow 243, Folkton, East Riding, is $7\frac{1}{4}$ inches (184 mm.) high, and preserved in the British Museum. It was found with a child-burial in an oval grave 13 feet (3.950 m.) from the centre, the grave being $1\frac{1}{2}$ feet deep.⁵ Its form and ornament show that it must be classed among the latter examples of type *a*.

No. 17 from barrow 21, Ganton, East Riding, is $6\frac{3}{4}$ inches (172 mm.) high, and now at the British Museum. It was found about 9 feet (2.736 m.) from the centre, and $3\frac{1}{2}$ feet (1.064 m.) below the natural surface with the body of a

¹ Bateman, 10 *F.D.*, 72; *Vest.*, 35.

² Bateman, *Vest.*, pp. 59, 60.

³ *Ar.*, vol. 52, p. 11.

⁴ Bateman, 10 *F.D.*, pp. 102-3.

⁵ Bateman, 10 *F.D.*, 115, 116.

young man. The barrow had a diameter of 60 feet (18.24 m.) and was 3 feet (912 mm.) high. At the centre was a grave containing two skeletons, a food-vessel of ill-determined type, and a barbed flint arrowhead. At a higher level and 7 feet (2.128 m.) from the centre was the body of a child and another food-vessel of different form. Eight feet (2.43 m.) from the centre was a grave containing a third food-vessel, somewhat differing in form from the last. About 12 feet (3.64 m.) from the centre lay the body of a child with beaker No. 18.¹ These interments show that beakers of the later period, when the lower part had become flattened and the constriction at the waist was becoming obliterated, were contemporary with some forms of the food-vessel.

No. 19 from barrow 63 Rudstone, East Riding, is 5½ inches (150 mm.) high, and now at the British Museum. It was found in a hollow only 4 inches (102 mm.) below the natural surface at a distance of 16 feet (4.86 m.) from the centre of the barrow with the body of a very young child. At the centre, but with a secondary interment, 6 inches (147 mm.) above the natural surface, was the body of a man about 55 years of age. With the body was a food-vessel and a beautifully barbed flint arrowhead.² The food-vessel, of a very common type in Derbyshire, Yorkshire, Scotland, and occasionally met with in Ireland, has at the shoulder a groove with five perforated stops or ears. The contents of these two barrows leave the impression that the beaker was now thoroughly decadent, and was being replaced by a newer type of ceramics—the food-vessel.

No. 20 from Eckford, Roxburgh, is 8½ inches (210 mm.) high, and now in the National Museum at Edinburgh. It was found in a small cist lying east and west, but no other details are recorded.³ In spite of its form its ornament belongs to type γ , and it is evidently later than the earlier examples from South Britain. For in these a triangle is always shaded with straight lines, while on No. 20 the lines of shading are broken. In Scotland the examples of type α are but few in number.

The results may now be briefly summed up. Out of twenty examples of type α , three were found with large flint daggers; five with objects such as the button with a V-shaped perforation, the "mesh-rule" and the "pulley ring," which have been found associated on more than one occasion with a flint dagger. But in two cases I cannot exhibit the beakers themselves, only two that greatly resemble them in essentials. In other words eight beakers belong to a time when bronze was so rare that flint daggers were still in use. A ninth example (No. 2) is extremely like a beaker found with a flat, plain, bronze knife-dagger and a perforated axe-hammer. Four examples were brought forward to show the type of skull that was prevalent when the beaker flourished, for the objects found with them are all of an early type. Three examples from Yorkshire illustrate the decline of the beaker, when it was gradually being replaced by the food-vessel. The earliest Scottish examples, though only one is exhibited, seem to be later than those from Wilts.

¹ *B.B.*, 161-166.

² *B.B.*, 245-51, Fig. 29.

³ *P.A.A.S.*, xxy, 29.

Hence it is reasonable to suppose that a period of some duration elapsed before the beaker reached Caledonia.

TYPE *B* (Pl. XXVII, XXVIII).

No. 21 from Roundway, Wilts, is $6\frac{1}{4}$ inches (159 mm.) high, and now in the Devizes Museum. It was found in an oval grave sunk to a depth of $5\frac{1}{2}$ feet (1·67 m.) below the surface of the ground, with the skeleton of an old man; a bronze tanged dagger 10 inches (254 mm.) long; a stone bracer or wrist-guard with a pair of holes at each end and a flint arrowhead.¹ The white incrustation in the lines that compose the design of the ornament is very noticeable, and though so common in neolithic pottery on the Continent, is very unusual in Great Britain.

No. 22 from Mere Down, Wilts, is 6 inches (152 mm.) high, and now in the Devizes Museum. It was found in a low barrow at a depth of $3\frac{1}{2}$ feet (1·06 m.) with two skeletons; a small tanged knife-dagger, flat, plain and bevelled at the edge, measuring 5 inches by $1\frac{1}{2}$ inches (127 by 38 mm.); a stone bracer with one perforation at each end; and 2 discs of gold leaf, very thin and rather larger than a shilling, bearing a cross with equal arms and a row of dots round the circumference.²

No. 23 from Brickyard, Oxfordshire, is now in the Ashmolean Museum at Oxford.

No. 24 from Lambourn Down, Berks, is $5\frac{1}{4}$ inches (141 mm.) high, and now in the British Museum.

No. 25 from Dunrobin Park, Sutherland, is 7 inches (178 mm.) high, and now in the museum of Dunrobin Castle. While digging for gravel a small stone cist was encountered at a depth of 2 feet (606 mm.). It contained the skeleton of a young woman about eighteen years of age, lying on her right side with the knees drawn up. Behind the body were eighteen quartzose beach-rolled pebbles; at the feet lay 118 small shale discs about the size and thickness of a silver threepenny piece. Of these, six were perforated. Complete measurements of the skull were made, of which I give the indices only:

Cephalic index	...	...	...	...	...	82·4
Vertical	"	...	...	...	...	69·8
Nasal	"	...	...	...	...	51·1
Orbital	"	...	...	...	...	90·0 ³

This beaker is interesting as the most northerly example, preserved entire, of the three types of beaker in Great Britain.

No. 26 from barrow 99, Goodmanham, East Riding, is $5\frac{1}{4}$ inches (141 mm.) high, and now in the British Museum. It was found with the body of a young woman in a large grave measuring $10\frac{1}{2}$ feet by 5 feet by $5\frac{1}{4}$ feet deep

¹ *W.A.M.*, iii, 185-6; Montelius, *Ch. B.Z.*, Figs. 479-481.

² *A.W.*, 44, Pl. II.

³ Communicated in a letter from the Rev. J. M. Jouss of Golspie, Curator of the Museum at Dunrobin.

(3.19 by 1.52 by 1.59 m.). Beside her was the body of a child with another beaker. Both these interments had disturbed an earlier one. Two feet (.606 m.) north of her head lay beaker No. 33, which was not associated with any skeleton in particular.¹ If, as there is reason to suppose, these three beakers are contemporary, it may be affirmed with certainty that Nos. 26, 33, do not belong to the earliest period of type β . The reason is this. The third beaker belongs to type γ and the triangles of the upper row of ornament are shaded with broken, not with straight lines.

No. 27 from barrow 161, Normanton, Wilts, is $7\frac{1}{4}$ inches (.184 m.) high, and now at Devizes. It was found in a grave nearly 6 feet (1.82 m.) deep with a skeleton.²

No. 28 from Winterslow Hut, Wilts, is $8\frac{1}{2}$ inches (.216 m.) high, and now in the Ashmolean Museum.³

No. 29 from barrow 3, Upton Lovel, Wilts, is $6\frac{3}{8}$ inches (.162 m.) high, and now in the Devizes Museum. It was found in a low barrow with a skeleton.⁴

No. 30 from Driffield, Yorkshire, is 7 inches (.178 m.) high, and now in the British Museum. It was found under a large barrow in a cist, covered by a very heavy cap-stone. The cist contained a very large skeleton with a stone bracer about 6 inches (.152 m.) long, having two gold-headed bronze rivets at its extremities, and near it was a very small bronze buckle. A portion of a thin, flat bronze dagger in a wooden sheath lay beside the body, as well as three large conical amber beads with the V-shaped perforation at the base. The body had been wrapt in linen from head to foot.⁵ It would have been better perhaps to have classed this under type α .

No. 31 from Beggar's Heaven barrow, Devil's Dyke, Brighton, is 5 inches (.127 m.) high, and now in the British Museum. It was found with a necklace of thin bronze leaf, rolled into small cylinders, and beads of very small, perforated discs of lignite.

No. 32 from barrow 62, Rudstone, East Riding, is $7\frac{3}{4}$ inches (.197 m.) high, and now at the British Museum. This beaker is specially interesting as it was found with a cremated interment. At the centre of the barrow was a large grave, 9 feet (2.736 m.) in diameter and $10\frac{1}{2}$ feet (3.19 m.) deep, with two stone cists at the bottom. In one cist was the body of an old man accompanied by beaker No. 35. At the centre of the other cist was a deposit of burnt bones belonging to an adult male, and in one corner lay a beaker of the same type as No. 32. Between the east side of the grave and the first cist lay No. 32 with the burnt bones of a strong adult male. None of these interments are primary.⁶ The fringe of diagonal lines above and below the bands of ornament on No. 32, show that it does not belong to the earliest part of the bronze period.

Sir Richard Hoare⁷ mentions two instances in which he found beakers with

¹ *B.B.*, 308-9.

² *A.W.*, 205.

³ *Ar.*, vol. 43, p. 341.

⁴ *A.W.*, 75, Pl. IX.

⁵ *Ar.*, vol. 34, pp. 254-5.

⁶ *B.B.*, 238-244.

⁷ *A.W.*, 121, 199.

burnt interments. Unfortunately all three—for two were found together in one instance—are now lost, though two “incense cups,” that accompanied the pair of beakers, are at present in the Devizes Museum. Judging from these, the interment could not have belonged to a very early period of the Bronze age.

[No. 33 was found with No. 26 and is described on p. 381.]

No. 34 from Brandon Fields, Suffolk, is $3\frac{1}{2}$ inches (.099 mm.) high, and now at the British Museum. This small beaker, a food-vessel not unlike a beaker and a stone bracer with three perforations at each end, were found together in a bed of drift, extensively worked for flints, on the banks of the Little Ouse. There was no tumulus and no bones accompanied the vessels.¹

[No. 35 was found with No. 32 and is described on p. 381.]

No. 36 (Pl. V), from Clifton, Westmorland, is 7 inches (.178 mm.) high, and now in the Carlisle Museum.

To sum up. Out of sixteen examples of type β three have been discovered with tanged bronze daggers or knife-daggers, including in one instance amber heads with the V-shaped perforation. A fourth was found with a stone bracer or wrist-guard; a fifth with a bronze leaf necklace of early type and on two occasions small objects of gold were associated with the bronze daggers. In several cases no details of the finding of the beaker have been preserved. But on the whole type β seems rather younger than type α , and that was Thurnam's conviction, though he gave no special reason for it. Yet though of later introduction into Britain than type α , having been brought over by a fresh wave from the Continent, both types must be in a large measure contemporary.

TYPE γ (Pl. XXIX, XXX).

No. 37 from Glenforsa, Isle of Mull, is $6\frac{1}{2}$ inches (.165 mm.) high, and now in the Museum at Edinburgh. It was found with a bracer of hard, polished green-stone, $3\frac{1}{4}$ inches (.083 mm.) long, with a perforation at each end; also with fragments of a thin triangular bronze blade.²

No. 38 from Collessie, Fife, is 9 inches (.228 mm.) high, and now in the Museum at Edinburgh. It was found in a stone cist on the natural surface, nearly at the centre of a huge cairn of stones about 120 feet (36.24 m.) in diameter and about 14 feet (4.25 m.) high. The cist contained a skeleton in a contracted position. About 12 feet (3.64 m.) from the centre of the cist was an oval pit, 6 feet (1.82 m.) deep, and at the bottom lay No. 48 in fragments, embedded in gravel, ashes or charcoal. This beaker is 7 inches (.178 mm.) high. About 25 feet (7.6 m.) from the centre of the cist another hole was discovered, but only 4 feet (1.21 m.) deep. It contained fragments of burnt human bones, among which lay a thin, triangular bronze blade, 6 inches (.152 mm.) in length, and near it was the gold mounting of the handle. Both of these are figured by Dr. J. Anderson as well as the two beakers.³

¹ *P.S.A.L.*, 2 Ser. V, 271-2.

² *P.S.A.S.*, ix, 537; *S.P.T.* b & c, Figs. 10, 11.

³ *S.P.T.* b & c, 3-4, Figs. 2-5.

Nos. 39, 52 from Ellon, Aberdeenshire, are $5\frac{1}{2}$ inches and $4\frac{1}{2}$ inches (130 and 114 mm.) high, and now in the Museum at Edinburgh. They were acquired with four flint arrowheads, stemmed and barbed, and perhaps all were found together.¹

No. 40 from Bellingham, Northumberland, is $6\frac{1}{2}$ inches (175 mm.) high, and now in the British Museum.

No. 41 from Nether Moor, Hunsonby, Cumberland, is now in the Museum at Carlisle.

No. 42 from Caick Muir Hill, Borthwick, Mid Lothian, is $7\frac{1}{2}$ inches (191 mm.) high, and now in the National Museum at Edinburgh. It was found in a stone cist at the top of the hill, but nothing more is known of its discovery.

No. 43 from Caick Muir Hill, Mid Lothian, is $6\frac{3}{4}$ inches (171 mm.) high, and now in the Museum at Edinburgh. It was also found in a stone cist on the top of the hill, but whether in the same cist as the above is not stated.²

No. 44 from Lanark Moor, Lanarkshire, is $6\frac{3}{4}$ inches (171 mm.) high, and now in the Museum at Edinburgh. It was found in a sand pit.³

No. 45 from Crawford, Lanarkshire, is 6 inches (152 mm.) high, and now in the Museum at Edinburgh. It was found in a stone cist under a cairn with a stout bronze ring, 3 inches (76 mm.) in diameter and flattened on the inner surface. Both are figured by Dr. J. Anderson.⁴

No. 46 from Juniper Green near Edinburgh, is $6\frac{1}{2}$ inches (165 mm.) high, and now in the Museum at Edinburgh.

No. 47 from Windy Mains, Humby, East Lothian, is $6\frac{1}{2}$ inches (165 mm.) high, and now in the Museum at Edinburgh. It was found in a cist while digging for sand.⁵

[No. 48 was found with No. 38, and is described on p. 382.]

No. 49 from Dairsie, Fife, is $7\frac{1}{2}$ inches (193 mm.) high, and now in the Museum at Edinburgh. It was found in a cist about $2\frac{1}{2}$ feet (760 mm.) below the surface in a sandpit in a low knoll overlooking the Eden. With it were four flint arrowheads with barbs and stems.⁶

No. 50 from Clintery Kinellar, Aberdeenshire, is $7\frac{1}{2}$ inches (197 mm.) high, and now in the Marischal College Museum at Aberdeen. It was found in a cist with flint arrowheads, a small flint borer and charred wood. With them was a large fragment of a bone ring in shape like a napkin-ring with three deep grooves round it, and one perforated stop in the central groove. The arrowheads and the borer were retained by the donor and are not now in the Museum.

No. 51 from Inveramsay, Chapel of Garioch, Aberdeenshire, is $7\frac{1}{4}$ inches (184 mm.) high, and now in the Museum at Edinburgh.⁷

[No. 52 from Ellon, Aberdeenshire, is described with No. 39 above.]

No. 53 from Fyrish, Evanton, Ross-shire, is 6 inches (152 mm.) high, and now in the Museum at Edinburgh. It was found in a short stone cist with a brachycephalous skeleton and a wristguard or bracer of polished felstone $4\frac{1}{2}$ inches

¹ *P.S.A.S.*, xxvi, 262.

² *S.P.T. & A.*, Figs. 64, 65.

³ *Ibid.*, iv, 165.

⁴ *Ibid.*, ii, 482.

⁵ *P.S.A.S.*, iii, 51.

⁶ *P.S.A.S.*, V, 214.

⁷ *P.S.A.S.*, xxi, 132.

(114 mm.) long having a pair of perforations at each end. It is figured by Dr. J. Anderson.¹

To sum up. Out of seventeen examples of type γ , two have been found with stone bracers; three with knife daggers, one of which had a gold mounting for the haft; two, perhaps four, with flint arrowheads; and one with a stout bronze bangle. As the amount of bronze found with type γ is proportionally greater than that found with α , we have reason to assume that as a type the former is the younger of the two, and this conclusion tallies with what we arrived at from typological considerations. Yet as both types lasted for a long space of time they must have been partly contemporary. Though no buttons with the V-shaped perforation happened to have been discovered with beakers in North Britain, they have been found by themselves in a cist or otherwise.

The proof of the great antiquity of the beaker may now be reduced to a tabular form, Table A, including some examples I only know from illustrations. It will be observed that eleven interments, out of twenty-five tabulated, contain objects directly inherited from the neolithic period, such as flint daggers (3), conical buttons with the V-shaped perforation (3), and stone wrist-guards or bracers (6). I know of no cinerary urns or food-vessels that have been found with any of these objects, with the exception of two food-vessels of uncommon type, each supposed to have been found with a conical button in two adjoining cists at Great Tosson, Northumberland.² Though the evidence is not altogether satisfactory, it may pass, as we have already learnt that some forms of food-vessel came into use before the beaker became obsolete. At Keith Marischal, in East Lothian, while sinking a cistern on the top of a knoll, two interments were found. One consisted of a skeleton in a cist below the centre of the knoll with an urn (lost) about 6 inches high, which must have been a beaker. The other interment consisted of a large cinerary urn set round with boulders, but in fragments. Among these were three jet buttons with the V-shaped perforation.³ I believe a mistake has crept into the report, which only came from workmen, and that the buttons were found with the beaker and the skeleton, not with the cinerary urn. Cinerary urns and food-vessels are sometimes found with stout daggers, but never with the thin, flat knife-dagger; with small, flat knives of uncertain age; with bronze bangles, gold objects, and perforated axe-hammers; but never with any direct legacy from the neolithic past save the axe-hammers, which, under one form or other, survived for a very long time. Hence the evidence seems overwhelming that the beaker, regarded as a class, is the oldest Bronze-age ceramic in Great Britain. Though it is true that before it became extinct it was contemporary with certain forms of cinerary urns and food-vessels.

The Distribution of the Beaker (Pl. XXIV.)

The distribution of the beaker in Great Britain is shown on the map, which makes no pretension to being complete, and it only indicates the locality of the

¹ *P.S.A.S.*, vi, 233; *S.P.T. b & c*, Fig. 12.

² *B.B.*, 431.

³ *P.S.A.S.*, xxxiii, 68-9.

finds, not the number of beakers unearthed. For in Yorkshire especially the tumuli frequently occur in groups in which several specimens have been found in the same group. The large gaps that appear are to be explained in various ways. In the south-east, where the land has been under cultivation for centuries and where the Saxons established themselves in force, and had no hesitation in appropriating grave-mounds that did not belong to them, it is hardly a matter of wonder that no specimens of the older ceramic have survived. In the south-west only one beaker is assigned to Cornwall, and I doubt if it really belongs to the class. It has the appearance of a dwarfed cinerary urn of the globular type and was found with a cremated interment; in fact no interments with inhumation are known in Cornwall. So for the present we cannot say for certain that Cornwall was occupied by the people that introduced the beaker. And Cornwall at any rate has been fairly well explored from an archaeological point of view by the Borlases. The example from Culbone in the extreme west of Somerset belongs to type β , which we have found reason to believe came later into Britain than type α . The centre of England is a complete blank at present. Perhaps it was little inhabited, to judge from the very few stone and bronze implements recorded by Sir John Evans in his *Ancient Stone Implements and Ancient Bronze Implements* as coming from the eight counties of Hereford, Worcester, Warwick, Northampton, Huntingdon, Salop, Leicester, and Nottingham.

Turning to North Britain there are still better grounds for believing that the north-west part of it was practically uninhabited. In the National Museum at Edinburgh there is not a single stone implement of any kind whatsoever from the western half of the counties of Sutherland, Ross, and Cromarty. And there are only two bronze instruments: one flat axe from the west end of Loch Assynt in Sutherland, and an axe with a slight stop-ridge and flanges from Loch Hope on the north coast of Sutherland. The Rev. J. M. Joass informs me that he only knows of two flint arrowheads from the north-west of Sutherland: one from Stoer (lost), and one from Achmore at the south-east end of Loch Assynt. Again, although duns and fortified hills are distributed nearly all over Scotland, except in the mountainous parts, in the map to his *Early Fortifications in Scotland*, Dr. Christison does not show a single native fort along the coast from Loch Alsh, opposite Skye, northwards to Thurso, nor anywhere inland till the east coast is reached.

Although type β is much less strongly represented numerically than α , γ , its geographical range is far greater. The two most northerly examples on the mainland of Scotland from near Dornoch and from Dunrobin, both in Sutherland, both belong to it, and if the fragments, preserved in the Museum at Edinburgh, from Unst in Shetland, are parts of a beaker, it was also of this type. The genuineness of a beaker, said to have been discovered at Mount Stewart, county Down, is disputed, but supposing the representation of it to be fairly correct—the original is lost—it belonged to type β . And so far as I can judge from a rough sketch of an example from Moytura, county Sligo, kindly sent me by Mr. George Coffey, this must also be included in the type.

ORNAMENTATION.

Type a (Pl. XXXV, 1-22).

The study of ornament is a matter of great importance, as by means of it the relative date of two vessels can sometimes be established, when the form, considered alone, might leave us in doubt. Here only a few examples can be given to show older and later developments. The ornament is disposed in three—very rarely two—or more broad horizontal bands or zones, separated by much narrower plain bands to serve as a contrast. The patterns on the first three lines from Figs. 1-16 and also Fig. 20 belong to the oldest period; those that follow are less early. Figs. 1-4 are from the three beakers found with a flint dagger. The usual technique employed to produce the ornament was to stamp the moist clay with a thin slip of notched bone or wood; but sometimes the pattern was merely scratched—often very rudely as in Figs. 3, 4, 21—with a pointed instrument. The use of the cord to produce an impression is very uncommon; but the use of a hollow stalk or cylinder to produce small circular depressions, as in Fig. 1, is still rarer. The only other case I know of is on No. 7 beaker. This method of ornamentation is also found on some neolithic pottery from Denmark.¹

The saltire pattern of Figs. 2, 8 is interesting, partly because we find it on foreign examples and partly because it is wanting in type β . The fringe of short diagonals, as already mentioned, is a sign of a latter period; it is never to be seen on the oldest beakers and is very common in type γ . In Fig. 18 the hexagonal pattern is evidently a development of the older lozenge and an innovation, as well as the shading by cross-hatching. It is enough to prove that No. 16, from which the ornament is taken, belongs to a later period. In Fig. 19 the broken lines used to shade the triangles, as has already been pointed out, indicate a later development, as in the oldest examples the shading is always produced by straight lines or by dots. Fig. 21 is almost the only example of triangles arranged along two parallel lines, so as to produce a lozenge intersected by a narrow band. In β , γ , this arrangement is common enough, and perhaps in this case the idea has been borrowed from another type and badly executed.

Type β (Pl. XXXV, 23-37).

The examples here shown give a rather exaggerated idea of the ornament proper to type β . As a rule it consists of narrow bands, alternately plain and ornamented in the simplest manner with oblique lines or lattice ornament. Figs. 23, 24, are good examples of the lozenge pattern intersected by a band. The simple lozenge, such as we find in Figs. 3, 4, 11-15, hardly occurs in type β ; the hexagon does not occur at all; nor do the elongated triangles so characteristic of α , γ .

¹ *G.G.* (1896), Pl. X, 99.

Type γ (Pl. XXXVI, 38–59).

Although the lozenge is a favourite motive, as in type *a*, now it is always bisected either by a single line or by one or more narrow bands, as in *β*. Sometimes the triangles, instead of forming a lozenge, are arranged to form a bold zigzag as in Fig. 54. Not infrequently the horizontal band of ornament is broken by narrow vertical strips or compartments, each filled with a different arrangement of lines as in Figs. 46, 47, 52, 57. This principle of discontinuous ornament in the same band or zone is very characteristic of some beakers on the continent, as will be seen in the sequel. Sometimes the lines, as in Fig. 46, are of extreme fineness and the pattern very minute. The fringes on Figs. 38, 40–48, 50, 51, all point to a later date, and we have to draw the same conclusion as that on page 380, that the beaker after being brought to Britain travelled but slowly from south and north. Although on the whole the ornament of *γ* may be considered as a development of that of *a*, some of it seems to be adopted from *β*.

ii. *TYPE β ON THE RHINE.*

After this brief survey of the three types of the beaker as it occurs in Britain, it is time to pass on to the second part of this paper. We must now look beyond the Channel and compare our type *β* with very similar beakers on the continent. The foreign examples are found on both banks of the Rhine between Coblenz and Mannheim; or to define the northern and southern limits in geographical terms, about half a degree north and south of Lat. 50°, where it cuts the Rhine at Mayence.

Here are exhibited (Pl. XXX) eleven examples of Rhenish beakers and five additional British ones (Pl. XXXI), so that their forms may be better compared. The rather angular outlines of Nos. 55, 59, from Andernach and Urmitz, recur on Nos. 27, 67, 68, from Wilts, Oxford and Aberdeen. The rounded forms of Nos. 54, 56, from Andernach and Urmitz, may be compared with Nos. 21, 23, 26, 29, 66, from Wilts, Berks, Oxon and Yorkshire. The outline of No. 63 from Urmitz does not differ much from No. 69 from East Lothian; nor No. 57 from Herrenheim from Nos. 34, 65, from Suffolk and Sutherland. And the outlines of Nos. 61, 62, 64, from the Palatinate are very similar to No. 22 from Wilts. It will be allowed, I think, that allowing for a possible difference of time between the two sets, and taking into consideration the distance that separates them, which can never be less than 400 miles as the crow flies, there is a substantial agreement between them. It seems too great to be the result of pure accident. They must have a common ancestry in the past. The tribe that introduced the earliest beakers of type *β* into Britain must at one time have lived on the Rhine. For the type exists not only in the Central Rhine, but also near its mouth. Dr. Pleyte in his large work *Nederlandse Oudheden* figures three beakers from the district of Veluwe in Guelderland and one from Rolde in Drenthe, which are quite comparable in form and ornament with some British and Rhenish examples. A fifth from Veluwe might be classed as type *γ*, and this is ornamented with a row

of saltires, spaced by five vertical lines on each side. The Batavian examples seem later than the Rhenish, and they must be coeval with the British, as Dr. Pleyte places them at the beginning of the Bronze age.

Since writing the above, Dr. Pleyte has very kindly sent me eighteen photographs of beakers from Holland, twelve of which are reproduced in Plates XXXIII, XXXIV, Nos. 84, 85 from Beilen, Drenthe, though narrower at the base, resemble some German and Bohemian varieties in which the ornament is not carried below the middle of the vessel. No. 86, from Borger in Drenthe, is quite British in form, but is ornamented by means of a cord. No. 87, from Emmen in Drenthe, is also quite British, and its ornament is typical of type β in Britain. All the others, Nos. 88-95, belong to type γ in so far as the neck is short, and there is a constriction where the neck and the lower part meet, but they differ in general aspect, in ornament and proportion from the Scottish beakers. For instance, the ornament on Nos. 88, 89, is quite unlike anything found in North Britain. On the other hand, the rows of saltires separated by groups of vertical lines on Nos. 92, 93, 94 are found on type α , though here they are more complicated than in Britain and the lozenge pattern, brought out by shaded triangles on each side of it (No. 91) also belongs to the same type. Other likenesses in the ornamentation are also apparent, but on the whole it may be said that the Batavian type γ has had no effect upon the British type, and it seems to have been a parallel development.

The ornament of Rhenish type β (Pl. XXXVI, 60-69).

In Figs. 60, 62, 63 from Urmitz and Andernach we find the same arrangement of triangles along two parallel lines, so as to form either a bold zigzag or a lozenge pattern as in Figs. 23, 24 of type β , and in 54, 55, 59 of type γ . But in the British examples there is a greater complication of line, showing progressive development. For instance, in Fig. 59 there are three parallel bands inserted between the triangles that form the zigzag. Another small difference is that the Rhenish potter often shaded the zigzag or lozenge patterns, so that they appear dark against a light ground. The British potter, on the other hand, shaded the adjacent parts so that the lozenges or zigzags stood out light on a dark ground. But as the lines of shading in foreign examples were frequently filled with a white composition, the effect would be a whitish zigzag or lozenge contrasting with the darker colour of the ware. So the difference between Rhenish and British pottery in this respect is not very great.

The only other designs that call for remark are those on the central parts of Figs. 67-69. They present the principle of discontinuity. That is to say, the horizontal band of ornament, instead of being uniform and continuous, is broken up into plain and decorated compartments, each of which differs in pattern and arrangement from its immediate neighbours. We have already seen this principle illustrated by Fig. 36 (β) and by Figs. 46, 47, 52, 57 (γ). Here the most salient feature is the enframed X, partly shaded and separated from the next one by plain and ornamented panels. The decoration on these is often a zigzag in white on a

shaded ground; or a series of vertical and horizontal lines arranged to form a pleasing contrast.

Although the enframed X, as a motive, does not occur in British type β and the forms of the beakers, Nos. 61, 62, from which they are taken are very feebly represented in Britain, yet this variety of the type is of the greatest importance. The special ornamentation on Nos. 61, 62 (Figs. 67, 69), is not obligatory, as Nos. 64, 75 prove, but it enables us to link Nos. 61, 62, 64, 75 with a different class of beaker of older type, found a long way east of the Rhine in what may be termed Central Europe.

iii. *The Bell-shaped Beaker* (Pl. XXXI).

The different class of beaker to which I refer is often called the "Bell-beaker," from its caliciform or bell-shaped form. Nos. 70-74 are examples of it, and it is evident that the motives (Pl. XXXVI, 67-69) are derived from vessels of the bell-beaker type. Comparing the vessels Nos. 61, 62, from which these are taken, with Nos. 70-74 we observe that the former are taller and the swell of the body is less pronounced. They are later than the bell-beaker, and the difference in height and form is either the result of the independent spontaneous modification which naturally follows with lapse of time or it is the outcome of the influence of taller beakers of different origin, such as Nos. 54, 56, 59. In technique and form No. 74 differs from the rest; first in having a round bottom, and secondly, because part of the ornament is produced by a small triangular punch, which has been applied so as to produce a zigzag in apparent relief. It is preserved in the Museum at Halle and is believed to come from near Bitterfeld.

This type of beaker occurs in Moravia, Bohemia, and Thuringia, especially in the region of the Saale, a western tributary of the Elbe. It is always believed to be an imported ware. In form and partly in ornament a similar ceramic is found sporadically in Spain, Portugal, the south of France, Brittany, and the Channel Islands. But the ornamentation that specially characterizes the Central European bell-beakers, that is to say the enframed X, coupled with discontinuity of motive, is very different. It does not occur, so far as I am aware, west of the Rhine valley, south of the Danube, east of about the longitude of Vienna, or north of the latitude of Berlin. It must therefore have developed within that area.

With regard to their age, a bell-beaker, in size and wall curvature rather like No. 61 from Ober Olm, near Mainz, was found at Stelčoves, in North Bohemia, with a thin triangular bronze blade $4\frac{1}{2}$ inches (105 mm.) long. From the line of the greatest width the butt end gradually narrows, just as in a flint dagger, and towards the lower end the edges are slightly beaten up, the better to retain the handle, for there are no rivets.¹ It has the appearance of being a very early example of the knife-dagger. With it was a stone bracer or wrist-guard with three perforations at each end like that from Brandon Fields (No. 34).

The bell-beaker from which the ornament of Fig. 72 is taken, was found near

¹ Pic, *C.P.*, i, 83.

Eisleben, and is now in the Museum of that town. It was accompanied by a copper knife dagger of rude make, $4\frac{1}{2}$ inches (105 mm.) long. In outline it has the appearance of a broad tanged dart or arrowhead; for from the line of greatest width the sides curve sharply inwards to join the tang.¹

Nos. 70, 72, from Rothleben, Schwarzburg, Rudolstadt, were found with a stone bracer of slightly curved section having a pair of perforations at each end. The lines of ornament on the beakers are filled with white inlay.²

As no bronze knife-daggers from British graves seem nearly so old as these, we have reason to believe that the bell-beaker on the Continent is older than any type of beaker in Britain. And this must apply to such of the Rhenish type β as are ornamented with the enframed X motive on account of the likeness of form between the beaker from Stelčoves, which is not very typical either in form or ornament, and that from Ober Olm. This, however, is certainly later than the Bohemian example, so that it and its congeners such as Nos. 60, 62, 64, 75 must be intercalated between the bell-beaker and British type β in sequence of time.

Ornament of the Bell-beaker (Pl. XXXVII, 70-83a).

Here Figs. 70, 71, 75, 81-83 are from Bohemia, the remainder from Thuringia or from places not far distant. Nearly the whole of it has parallels in British ceramic.

The "Cord-beaker" and its offshoots (Pl. XXXII, XXXVII, 84-91).

Up to this point we have traced one element of the Rhenish type β directly back to the bell-beaker of Central Europe. But this leaves out of account another constituent part of it, characterized by slenderer form, greater height and a somewhat angular profile, Nos. 54, 55, 56, 59, 63. And it still remains to suggest a possible origin for type α . These two points can be treated in some measure simultaneously.

In Germany there is a class of ceramic that goes by the name of *Schnurkeramik*, from its being almost exclusively ornamented by means of cord-impressions. It is very well characterised by the "amphora" and the "cord-beaker" (*Schnurbecher*), which are constantly associated in the same interment and always with inhumation. This type is very well developed in Thuringia³ and Bohemia, though not exclusively confined to these areas. In time it is partly contemporary with the bell-beaker, though as a type it may be older. An example of the "cord-beaker" is given in Pl. XXXII, No. 79, from Polleben, Mansfelder Seekreis, which is 8 inches (230 mm.) high, and now in the Museum at Halle. It differs in form from the ordinary beaker in that the neck forms a distinct part, united by an offset with the swell of the belly. The ornament too (Pl. XXXVII, 84-91) is invariably confined to the neck with the exception of a fringe, carried along the upper side of the globular part. In this example the ornament is disposed in bands or zones, but in earlier examples it is continuous.

Early British forms of the beaker such as Nos. 1, 4, 7, 14, from Berks, Wilts and Derbyshire seem to show that originally the lower part was globular, or nearly

¹ Grössler, *V.F.O.M.*

² *Z.E.*, xxx, 21.

³ Götze, *G.u.O.*

so, but in time gradually flattened, as in Nos. 15, 16, and in most examples of type γ . And a form like No. 7 with its nearly upright neck, taken in conjunction with the sharply defined constriction as in Nos. 1, 6, 13, 14, suggest the idea that in the prototype the neck was regarded as a separate structural part, sharply distinguished from the nearly globular belly. Dr. Götze¹ gives illustrations of three beakers, all descendants of the cord beaker, as the absence of ornament on the belly or on the greater part of it shows. One from Merseburg and another from Atzdorf—or Querfurt as they told me at the Halle Museum—though only about $5\frac{1}{2}$ inches (135 mm.) high, might serve as prototypes for No. 7. The other from Merseburg with its wide neck might serve the same purpose for Nos. 4, 5 and others of like form.

No. 76 from near Querfurt is $7\frac{1}{2}$ inches (181 mm.) high and now in the Halle Museum. It has lost a good deal of the characteristic form of the type; the decoration is executed with the point, not with the cord; but it preserves the older tradition of entirely covering the neck with a simple design. It seems a good deal later than the preceding example.

The very imperfect series of beakers that follows, though all that I can procure at present, exhibit modifications with lapse of time. This is quite certain as far as No. 82,² because in all these the ornament stops short of the bottom in conformity with ancient traditions. These beakers are termed by Dr. Götze *zonen-schnur-becher* or “cord-beakers with ornament in zones.” His theory is that in many places the “cord-beaker” and the *zonen-becher* (= the bell-beaker) have reacted upon each other and that this fusion of types has given rise to the *zonen-schnur-becher*. It takes its slender form, as in Nos. 76, 78, and frequently the separation of neck and belly from the “cord beaker,” but the designs and the system of ornamentation (Pl. XXXVII, 92–99) are derived from the *zonen-becher* = bell-beaker.³ This seems to me a very reasonable hypothesis and accordingly I have adopted it and applied it to British forms which Dr. Götze had not included.⁴

No. 78 from Mittlehausen, Weimar, is $6\frac{1}{2}$ inches (165 mm.) high. No. 77 from Aeberode, Salzünde, is $5\frac{1}{4}$ inches (133 mm.) high. Nos. 81, 82 from Eisleben are only $3\frac{1}{4}$ inches and $2\frac{3}{4}$ inches (083 and 060 mm.) high. No. 83 from Nieder Schmon, Querfurt, is 4 inches (110 mm.) high, but has quite the form of a beaker of type β . It comes from the same part of the country as No. 76. All these beakers are in the Museum at Halle.

Nos. 62, 80, from Horchheim, near Worms, and from Frankenthal, south of Worms, between it and Mannheim, are now in the Museum at Mainz.

Although the list might be considerably increased if I had the photographs to show, perhaps it is sufficient for the purpose. The time that elapsed between

¹ Z.E. (1900), 263.

² Excepting No. 80.

³ Z.E. (1900), p. 260–2.

⁴ It ought to be mentioned that Dr. P. Reinecke in *Westdeut. Zeits.* (1900), pp. 259, 260, classes the beakers from Urmitz and Andernach, Nos. 54–56, 58, 59; from Herrnsheim, No. 57; Oberolm, No. 61; Horchheim, No. 62; Gabsheim, No. 73, and Frankenthal, No. 80 and many others, under the comprehensive title of *Glockenbecher* or bell-beakers.

the flourishing period of the cord-beaker and the end of the Rhenish type β may be estimated probably at several centuries, during which modifications of some sort were bound to take place. The art of pottery was carried on by tradition and memory. In an out-of-the-way place, where life was stagnant, the women who probably made the pots would carry on the tradition far truer than those that lived in more frequented districts or were migratory in their manner of life. In the first case the woman imitated as well as she could the few examples she had seen or could remember. In the other case she would vary her designs if she had seen new ones that struck her fancy. The more she had seen, the more she would change her old style. Tradition and memory would act on the potter with respect to her art just in the same way as it acted upon her with respect to the folk-stories and tales she was accustomed to repeat. The more stories she had heard and the more incidents she knew, the more would interchanges of incidents take place between one tale and another in her repetitions of them, partly from carelessness, partly from forgetfulness. In a story the essential and invariable part is the plot or framework, for many incidents are variable and inessential. In pottery the form is the equivalent of the plot and is therefore relatively stable, much more so than the ornament, the equivalent of the incident. This explains how the earliest examples of type α such as No. 7 can retain so much of the old form, while in many respects its system of ornamentation is quite different from its supposed prototype the cord-beaker, and why some varieties of type β take more after the offshoots of the cord-beaker than after the bell-beaker from which their system of ornament is almost entirely derived.

Type α then descends or seems to descend from offshoots of the cord-beaker that retained much of the old form, but had adopted from the bell-beaker the principle of ornamentation in alternately plain and decorated bands. And it may have retained from the cord-beaker its fondness for elongated triangles as a decorative motive, Fig. 87.

Type β seems to have two distinct lines of descent which eventually converged. One starts from offshoots of the cord-beaker which had been greatly modified by contact with the bell-beaker, far more so than is the case with type α , and on that account we may say that they have a different secondary origin. The second line started from the bell-beaker and has possibly been modified by contact with beakers that belong to the first line, though that does not seem to me quite certain.

Such, it appears to me, may have been the history of the British beaker. It arose in Central Europe. In the region traversed by the Saale, a western affluent of the Elbe, there is an area between 80 and 90 geographical miles square, where the cord-beaker, the bell-beaker and their derivatives are all found. The same is true of Northern Bohemia. Either of these two localities may have served as a starting point. The movement was first in a westerly direction and eventually reached the Middle Rhine, though the intermediate stations cannot at present be traced. From the Central Rhine the movement was directed partly northwards

into Batavia, partly north-westwards into Britain. Here again the intermediate stages are effaced and cannot be marked by archæological finds on a map. Yet in spite of this it is impossible to believe that the British types α , β have their first origin in Britain itself.

Lastly, I have to express my grateful thanks to Mr. Charles Read of the British Museum; to Dr. Joseph Anderson of the National Museum at Edinburgh; to Mr. Arthur Evans of the Ashmolean, Oxford; to the Curators of the Devizes Museum; to Mr. E. Howarth of the Sheffield Museum; to Mr. L. Hope of the Carlisle Museum; to Dr. Reid of the Marischal College Museum, Aberdeen; to Dr. Götze of the Royal Ethnographical Museum, Berlin; to Dr. Lehnert of the Bonn Museum; to Dr. Lindenschmit of the Mainz Museum; to Major Dr. Förtsch of the Halle Museum, and to Dr. W. Pleyte of the Museum of Antiquities at Leyden, for kindly allowing me to obtain photographs of such beakers in their charge as were necessary for my purpose.

DISCUSSION.

MR. C. H. READ said:—Mr. Abercromby's paper is a useful contribution to prehistoric literature, and the method is in the main a sound one. A few points, however, seem to lend themselves to friendly criticism.

1. The very title of the paper is in itself a *petitio principii*, for a comparison with continental types, and reference to continental authorities, would seem to show that the examples used by Mr. Abercromby are not admittedly of the Bronze Age (*see for instance* Koenen, *Gefässkunde*, 1895, Pl. III, Figs. 4-6). These can only be Mr. Abercromby's "beakers"; they were found in barrows near Wiesbaden, and are set down by Koenen explicitly as of the Stone Age (p. 28). Neither Lubbock nor Greenwell go so far as to maintain that all barrow pottery is of the Bronze Age, but are rather in agreement with Koenen, who, moreover, gives authorities (*e.g.*, Klopffleisch, Naue, and others). If Mr. Abercromby wishes to maintain the contrary opinion, he also must produce his evidence.

2. The second point to which I would call attention is connected with the first, viz., the uncertainty as to the metal of which many of the barrow "bronzes" are made, whether they are strictly bronze or only copper, perhaps naturally impure. One difficulty in settling this question is found in the rarity of the implements themselves and their consequent value, or in their decayed state, which leaves but little metal to deal with. If of copper, they might still reasonably be assigned, according to Montelius, to the last or even the third of the four stages into which he divides the neolithic period. If they should be of true bronze, the fact would be in Mr. Abercromby's favour; but he himself produces cases in which no bronze, but only stone, implements accompany the human remains.

3. It is questionable whether mere angular ornament can be safely used to differentiate culture periods. The analogy of modern savages would seem to prove the contrary. I would therefore urge that mere varieties of angles should not be used as substantive evidence, but taken as corroboration in suitable cases.

4. In formulating a type series for the purposes of classification, the one essential is that the types shall be easily distinguished from one another. This is

scarcely the case with Mr. Abercromby's types β and γ , which are far too much alike.

Mr. ABERCROMBY, in reply said :—1. In reply to Mr. Read's criticism I would remark that if I have not stated specifically that the Rhenish types belong to the end of the neolithic period, it was through inadvertence and through supposing that the fact was generally known. For I have supposed that they were earlier than the British types, and I know that Koenen and other German archaeologists place them at the end of the neolithic period or in the age of copper. What I intended to suggest was that the Bronze Age beakers of type β in Britain are united by unbroken inheritance with neolithic beakers of the same type on the Rhine and ultimately with beakers of still older type in Central Europe. The fact seems to be that no exact terminus for the Stone Age or exact beginning of the Bronze Age can possibly be found. Like the colours of the spectrum, the two civilizations shade off into each other so gradually that no absolute line of demarcation can be drawn between them. This transition stage doubtless lasted for a long time. The first migration to Britain very probably took place during this period of transition, when bronze was very rare and stone was still employed for weapons and cutting tools. But as the British beaker types certainly persisted far into the Bronze Age, I thought it more convenient to designate the whole series as belonging to the Bronze Age, though I think the earliest examples might be more exactly placed in the transition period.

2. With regard to the possibility that the bronze instruments I have mentioned are in reality of copper, I cannot say much; only an analysis of each article can settle the question. But the earliest types of copper daggers with a long narrow tang, terminating in a hook, and those with a broad tang without rivets, such as are found in the second settlement of Troy, and also here and there in Europe, never, I think, reached Britain. So the type with three rivets and no tang, to which the British thin, flat knife-dagger belongs, must be a good deal later, and for that reason we may suppose for the present that they are of bronze and not of copper.

3. It would not be legitimate to compare the ornament on British beakers with ornamental designs found on vessels of a very different class from a remote part of the world. But it seems to me quite fair and right to do so, as corroborative evidence, when the vessels belong to the same type and are found at no enormous distance from our shores. Form and ornament supplement one another and must be taken together. Here they are so intimately connected that when the beaker disappeared all its most characteristic ornamentation died with it, for it is not found on the food-vessels and cinerary urns that succeeded it in time.

4. Though Thurnam's definitions seem clear enough, it is not always easy to apply them in practice. A few beakers are amphibolous; taking the right hand profile into consideration the beaker belongs to type β , while the left profile shows that it belongs to type γ . So I regard Thurnam's three types as provisional. When I have obtained photographs of all or nearly all the beakers in Britain it will become necessary to make some changes in his arrangement of them and to increase the number of types, sub-types and varieties.

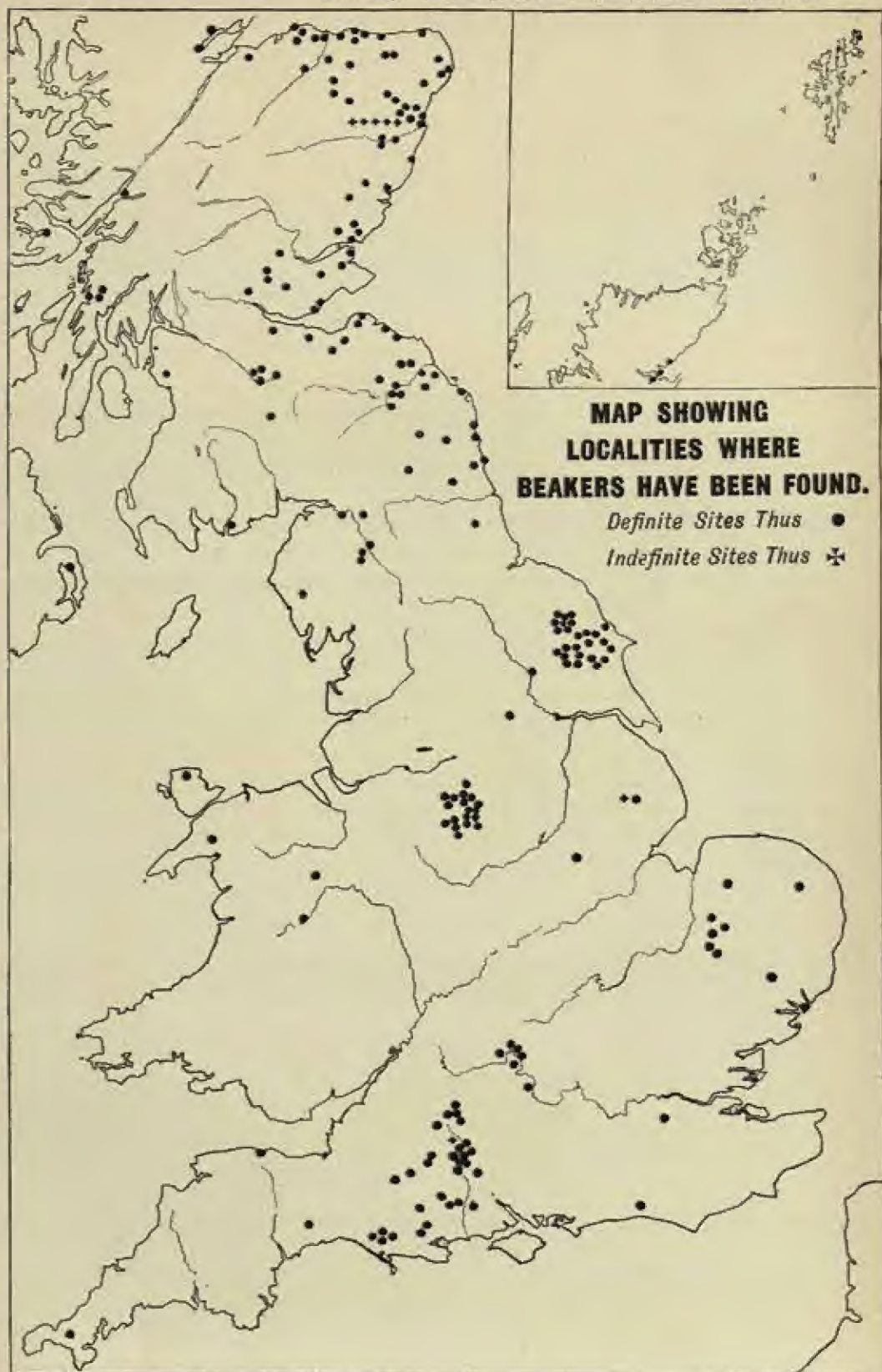
NOTE ON MR. ABERCROMBY'S PAPER.

At a meeting in Section H of the British Association for the Advancement of Science, held on September 12th, 1902, at Belfast, in the discussion which followed the reading of this paper, Dr. T. H. BRYCE said:—

Not the least interesting feature of Mr. Abercromby's valuable paper is the way in which his conclusions conform with the general trend of the evidence derived from the study of skull forms. Wherever the beaker has been found in this country, associated with human remains, the skull has been brachycephalic in proportions, and the region from which he derives this ceramic is within the area of the "Alpine" broad-headed type. It is now generally argued that the dolichocephali in Western Europe were, in purity, confined to the extreme western verge—in the later Stone age, while there was spreading from the eastward into Central and North-east Gaul, an intrusive brachycephalic race or races. It is interesting to find that the pottery associated with the remains of the dolichocephali, and intrusive brachycephali of early Britain, bears out the deductions from this general distribution of skull form. In a recent paper I had occasion to describe a number of examples of the earlier round-bottomed pottery—and I have been much interested to hear that Mr. Abercromby's results for the oldest Bronze age type, and my own for the neolithic type, form the complement of one another. I was led to the conclusion that the earlier type was imported direct from the south by way of the Dolmen track along the coast route to the north, and that the pottery of the corresponding cultural phase in Denmark and Sweden presented elements foreign to the western series.

Thus if the conclusions regarding the neolithic and earliest Bronze age ceramic types be well founded, they form a complement hitherto wanting, to the conclusions regarding the early races in Britain which have been reached from the study of their skull forms—and Mr. Abercromby's results are important in pointing to, at any rate, the more immediate origin of the brachycephalic race which reached Britain about the end of the Stone age, and about which there has been more room for difference of opinion than about the earlier Iberian race.

Mr. COFFEY congratulated the author of the paper on the interesting results he had obtained. He was glad that the chronology of our sepulchral pottery was at last being investigated on systematic lines. With regard to the scarcity of bronze in the early interments, it must be remembered that bronze was rare in interments even in the fully developed Bronze age. At the same time, the table drawn up by Mr. Abercromby, which showed a progression of type in the objects found with the pottery, together with the general evidence on the subject, was, in his opinion, conclusive as to the succession of the types of beakers α , β , γ . It was remarkable that the beaker type should be almost unknown in Ireland. The supposed beaker from Mount Stewart, co. Down, was not, he believed, of that class. It is figured as one of a group of urns in the *Dublin Penny Journal*, 1832, p. 108. Two of the vessels in this group are the two urns figured in the *Ulster Journal of Archaeology*, vol. ix, Plate I. If the figures are compared it will be seen that the drawing of these urns in the *Dublin Penny Journal* are very incorrect. From the apparent thickness of the lip, and the ornament on the inside of the lip, and the general



THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



1. Wilts.



2. Wilts.



3. Wilts.



4. Wilts.



5. Wilts.



6. East Riding.



7. Berks.



8. Wilts.



9. Derby.



10. Stafford



11. Derby.



12. Derby.



13. Derby.



14. Derby.



15. Staffordshire.



16. East Riding.



17. East Riding.



18. East Riding.



19. East Riding.



20. Roxburgh.



21. Wilts.



23. Oxford.



22. Wilts.



24. Berks.



25. Sutherland.



26. East Riding.



27. Wilts.



28. Wilts.



29. Wilts.



30, East Riding.



31, Sussex.



32, East Riding.



33, East Riding.



34, Suffolk.



35, East Riding.



37, L. of Mull.



38, Fife.



39, Aberdeen.



40, Northumberland.



38. Westmoreland (Type β).



41. Cumberland.



42. Mid Lothian.



43. Mid Lothian.



44. Lanark.



45. Lanark.



46. Mid Lothian.



47. East Lothian.



48. Fife.



49. Fife.



50. Aberdeen.



51. Aberdeen.



52. Aberdeen.



53. Ross.



54. Andernach.



56. Urmitz.



55. Andernach.



57. Herrensheim.



59. Urmitz.



58. Andernach.



60. Unknown.



61. Ober Olm.



62. Horchheim.



63. Urmitz.



64. Unknown.

ELEVEN RHENISH BRACKERS OF TYPE β .
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



65. Sutherland.



66. Berks.



67. Aberdeen.



68. Oxford.

FIVE ADDITIONAL BRITISH BEAKERS
OF TYPE 3 FOR COMPARISON WITH
THE ELEVEN RHENISH BEAKERS
ON PLATE XXX.



69. East Lothian.



70. Rudolstadt.



71. Wanzleben, Pr. Sachsen.



72. Rudolstadt.



73. Gabsheim.



74. Bitterfeld.



75. Hirschheim.

BELL-BEAKERS FROM CENTRAL EUROPE
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



76. Quersfurt.



77. Salzmünde.



78. Weimar.



79. Polleben.



80. Frankenthal.



81. Eisleben.



82. Eisleben.



83. Quersfurt.

CORD-DEAKERS FROM CENTRAL EUROPE.

THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



88. Uddel.



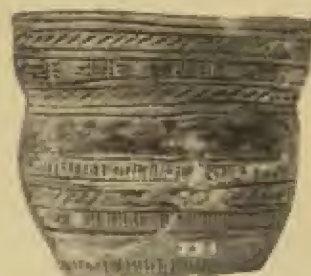
89. Kootwijk.



84. Beilen.



85. Beilen.



90. Epe.



86. Borger.

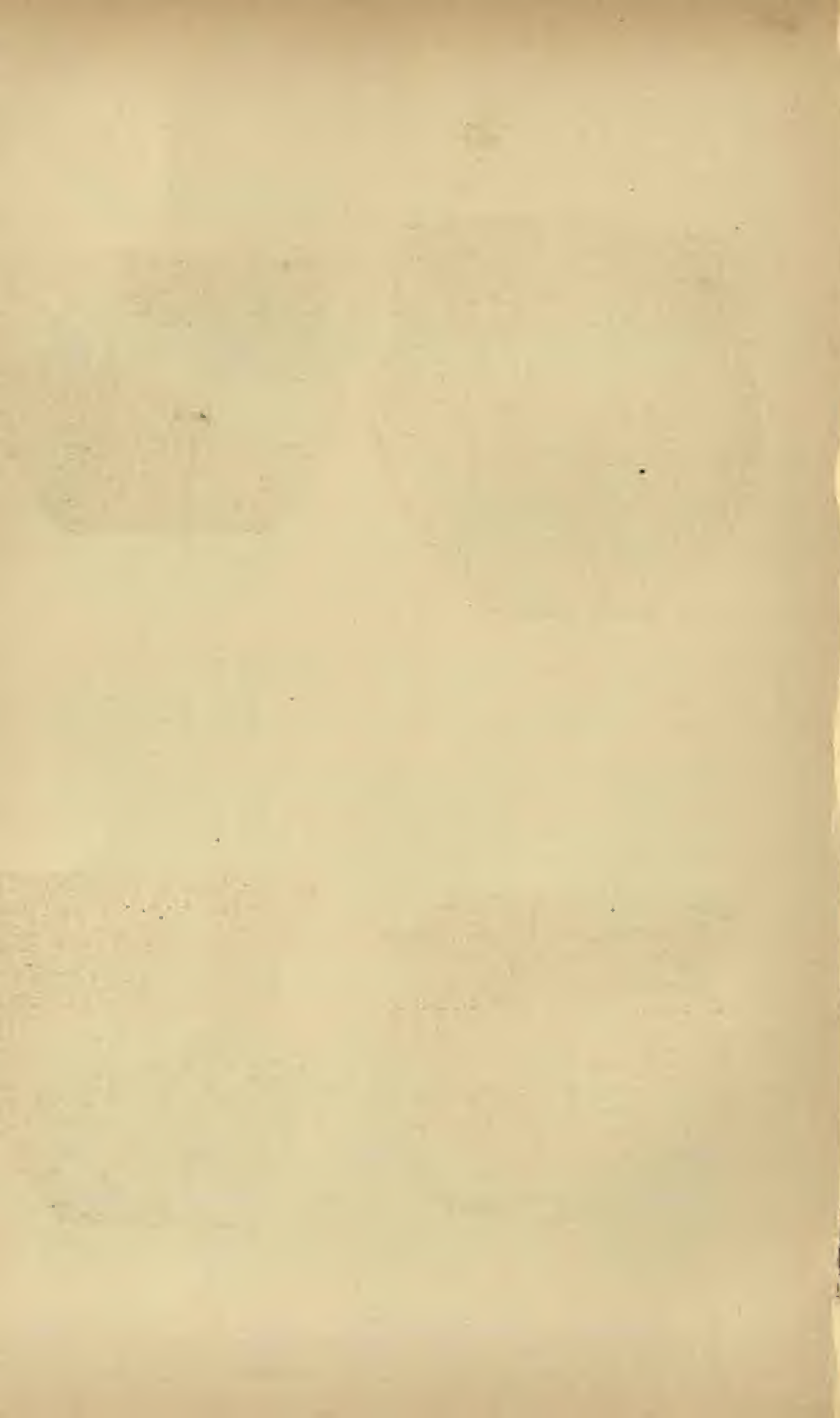


87. Emmen.



91. Bleekbergen.

TWELVE BEAKERS FROM HOLLAND: TYPES β AND γ .
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.





92. Epe.



93. Epe.



94. Brummen.



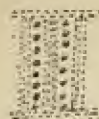
95. Wageningen.

BEAKERS FROM HOLLAND: TYPES β AND γ .

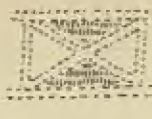
THE OLDEST BRONZE-AGE CERAMIC TYPE IN BRITAIN.



TYPE a. Nos. 1-22.



1. Wilts.



2. Derby.



3. E. Riding.



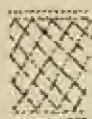
4. E. Riding.



5. Derby.



6. Derby.



7. Wilts.



8. Wilts.



9. Wilts.



10. Wilts.



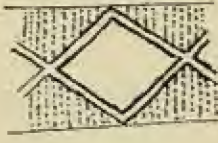
11. Wilts.



12. Wilts.



13. Derby.



14. Derby.



15. Derby.



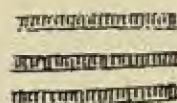
16. Derby.



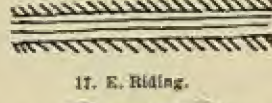
18. E. Riding.



19. Roxburgh.



20. Wilts.

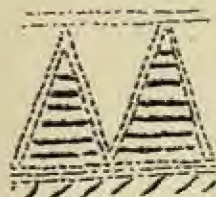


17. E. Riding.



21. Stafford.

TYPE B. Nos. 23-37.



22. Argyll.



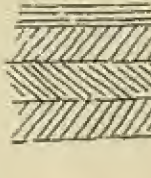
23. Berks.



24. Wilts.



25. Wilts.



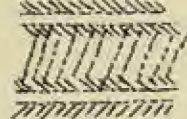
26. Somerset.



27. Berks.



28. Sussex.



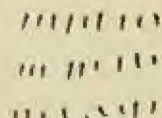
29. Westmorland.



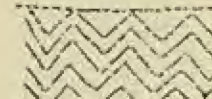
30. Oxford.



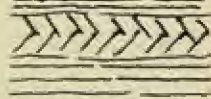
31. E. Riding.



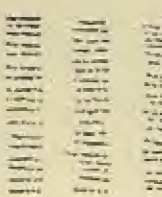
32. Berks.



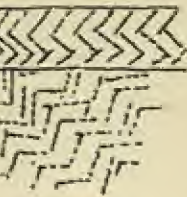
33. Westmorland.



34. Oxford.

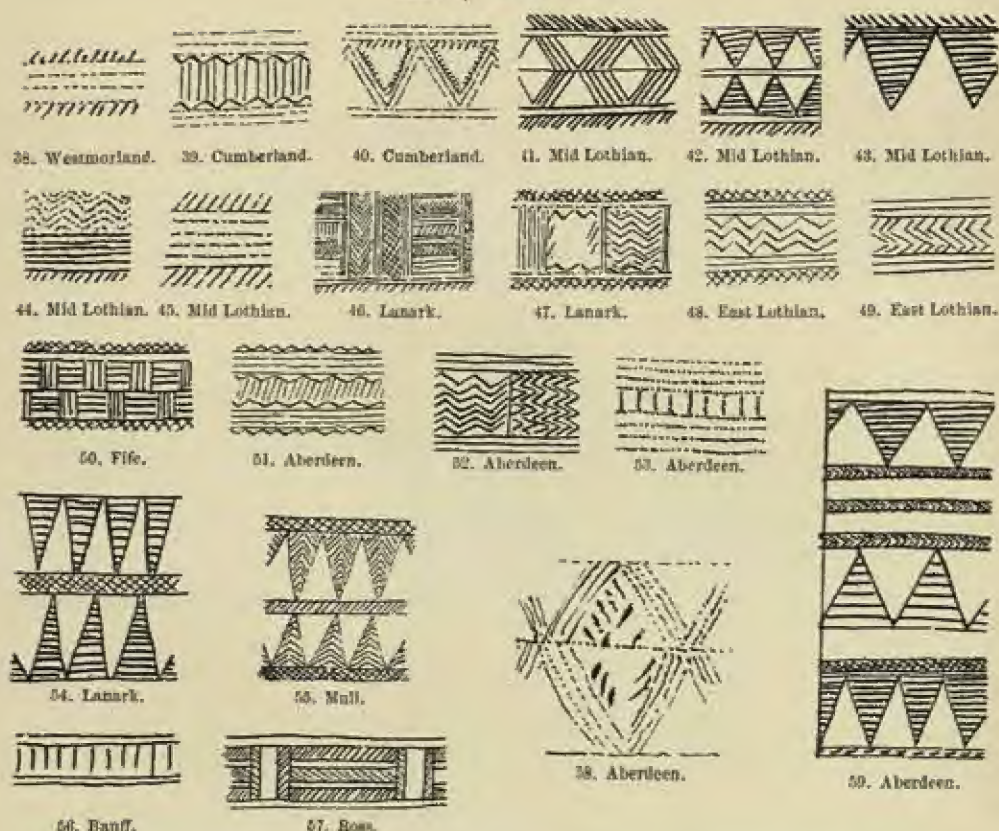


36. Stirling.

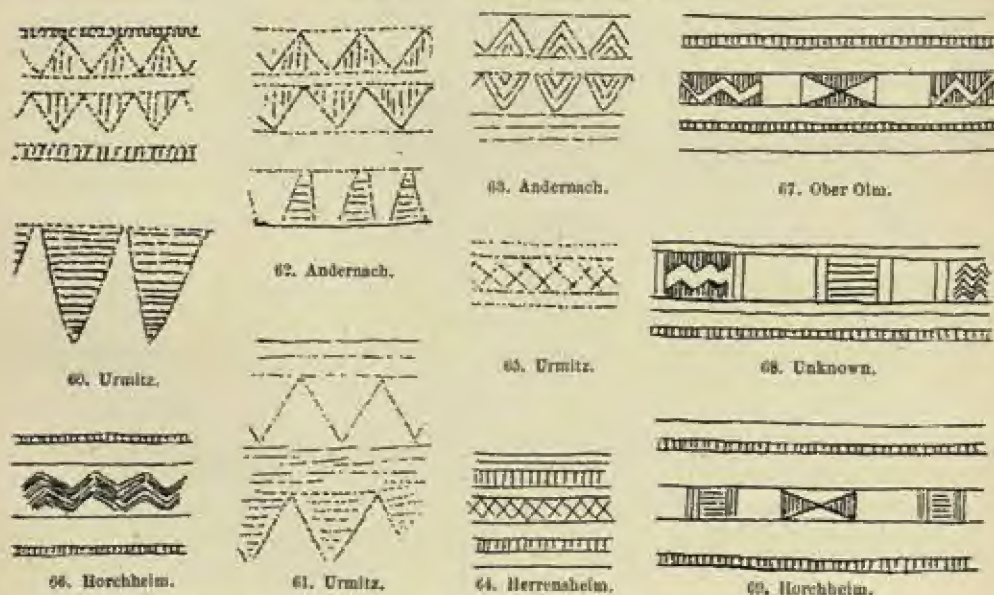


37. Caithness.

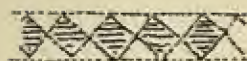
TYPE γ . Nos. 38-59.



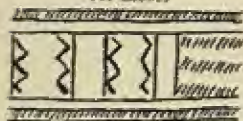
TYPE β : FOREIGN. Nos. 60-69.



BELL-SHAPED BEAKERS. Nos. 70-83a.



70. Liboc.



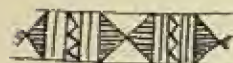
72. Eisleben.



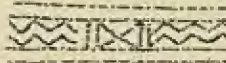
76. Erfurt.



80. Rothleben.



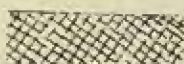
81. Smíchov.



71a. Litoměřice.



73. Gr. Osterhausen.



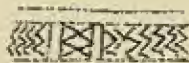
78. Lelselheim.



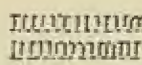
82. Smíchov.



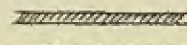
83a. Pr. Saxony.



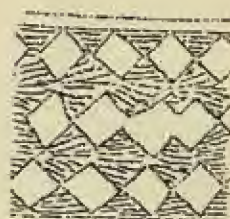
71b. Litoměřice.



74. Densau.



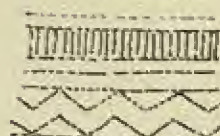
77. Erfurt.



75. Kralupy.



79. Bitterfeld (?)



81. Blyany.

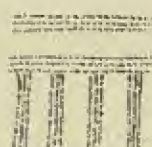
CORD BEAKERS. Nos. 84-91.



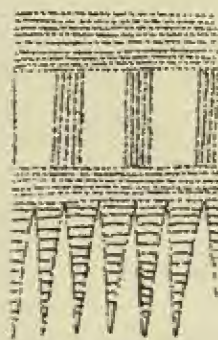
84. Uedersleben.



85. Kötschen.



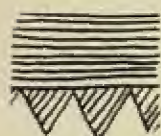
86. Rothmansdorf.



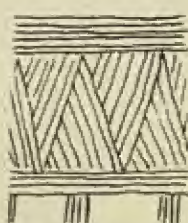
87. Kötschen.



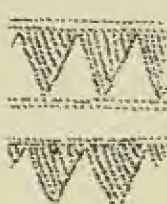
88. Ammendorf.



89. Trebnitz.

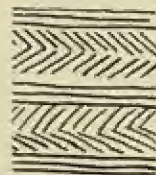


90. Kuckenburg.

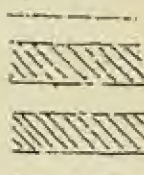


91. Nickelsdorf.

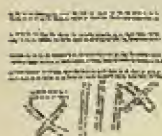
BEAKERS WITH ZONE ORNAMENT. Nos. 92-99.



92. Jutland & Drenthe.



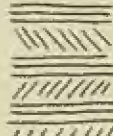
93. Bügen.



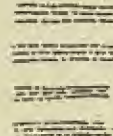
94. Nantschütz.



95. Attendorf.



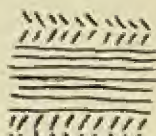
96. Merseburg.



97. Blyany.



98. Rodnice & Holmbice.



99. Salzmünde.

character of the ornament which covers the entire outer surface of the vessel, as shown in the drawing in question, he suspected that the form of the vessel was incorrectly drawn, and that the original belonged to a different class of vessel. He thought it well to place this opinion on record, as the question of distribution may sometimes become important in reference to Ireland. The fragment from Moytirra, co. Sligo, mentioned by Mr. Abercromby, is one of a number of fragments from the same cist found by Colonel Wood-Martin, and now in the Dublin Museum. They consist of fragments of at least three distinct vessels of the beaker class (Wood-Martin's *Rude Stone Monuments of Ireland*, Figs. 146-148). These are certainly of the beaker class, and are of the fine paste and characteristic ornament of type β . They are all from the one grave, and are the only examples which can at present be referred with certainty to Ireland.

NOTE ON PREHISTORIC HUMAN REMAINS FOUND IN THE ISLAND OF ARRAN.

BY THOMAS H. BRYCE, M.D.

[WITH PLATES XXXVIII, XXXIX.]

DURING the past two summers I have spent a portion of my vacation in exploring the cairns in the Island of Arran. In the course of these explorations, which were begun in company with Dr. Ebenezer Duncan of Glasgow, I was fortunate enough to recover a number of skulls, and a quantity of the other bones of the skeleton, in certain megalithic structures which presented some interesting features. In a recent paper read to the Society of Antiquaries of Scotland,¹ to whose Council I was indebted for the funds to carry out the excavations, I have described the researches in detail. In the present paper I propose to give a short account of the anatomical characters of the human remains discovered by Dr. Duncan and myself, and to refer to the records of previous discoveries in order to complete the account of the prehistoric inhabitants of the island.

I must first, however, briefly state the general result to be inferred from the archaeological data available for the determination of the age to which the races belonged, whose remains have been discovered.

In Arran and the neighbouring peninsula of Kintyre, there is very clear evidence of a succession of cultural stages. Two types of culture are to be recognized, which differ very materially from one another, in respect of the character of the associated sepulchral monuments, in the nature of the burial customs, and in the character of the deposit both as regards implements and especially pottery.

The earlier type is characterized by segmented megalithic chambers without a passage, but perhaps provided with a portal, or serially arranged megalithic cists, enclosed in large cairns. In the compartments of the chambers, or cists, are found the remains of many individuals. The implements are of stone only, and the pottery is invariably in the form of round-bottomed vessels of various types. They are either small bowls of dark ware with handles on the neck, or vessels with a sharply returning upper portion or brim. The ornamentation is either in the form of shallow vertical flutings, or groups of straight lines and dots, or, in one case, of semi-ellipses, one within the other.

The second type is characterized by short cists (in which single individuals are buried), and the cist is placed either in a cairn—or a circle of standing stones—or, it may be in the ground without an over-ground structure to mark the spot. In the cists with unburnt bones are found implements of stone, and in some cases of bronze, beads of jet, and pottery of the food-vessel type, elaborately decorated, generally with a chevron pattern.

¹ *Proc. Soc. Ant. Scot.*, xxxvi, 1902, pp. 75-173 (with illustrations in the text and four plates).

Typical cinerary urns with burnt bones have also been found in Arran.

All the evidence goes to prove that of the two contrasting cultural phases, the one is that which prevailed in the south-west corner of Scotland in the Age of Stone, and the other, that which prevailed during the Age of Bronze.

Megalithic Chamber-Builders.

The bones were found in great confusion heaped in the corners of the compartments of the megalithic structures—at different levels—strongly suggesting successive interments. It was thus impossible to reconstruct the several skeletons, so that the bones are of necessity described in groups. They belonged to individuals of all ages from the infant to the aged.

The fragmentary condition of the vertebræ, sacra, pectoral and pelvic girdles, prevents any very special feature being determined, but a number of bones of the free extremities were recovered.

Humerus.—Eighteen bones are represented, nine right and nine left, but none paired, and only four are quite entire, two male and two female specimens. The male bones are well marked; the female show great contrast in length and marking. The longest male bone measures 348 mm., being well up to the average of modern bones; the shortest female 292 mm., distinctly below the modern average. In one bone there is an intercondylar foramen.

Bones of Forearm.—In all there are seventeen adult ulnæ and ten adult radii, and two bones belonging to a child. The extreme shortness and slenderness of the female bones is remarkable.

Femur.—There are portions of twenty-one adult bones—none certainly paired—and two immature bones. The maximum length could only be accurately measured in one female bone, viz., 413 mm. In a male bone it was approximately estimated at 447 mm. The average platymetric index for eight male bones is 69·8, a decided, but not marked degree of platymery, the average for three female specimens being 78·9. The linea aspera is moderately prominent, and the degree to which the antero-posterior diameter exceeds the transverse varies greatly.

Tibia.—Nine adult bones were recovered. Three were probably female, and one was remarkably short, being only 310 mm. in maximum length. Its head is somewhat retroverted, but this is not marked in the other bones. There is a distinct antero-posterior convexity in several, but not in all the specimens, and in two the surface curves sharply downwards posteriorly. In all the bones except one, there is a more or less marked facet on the anterior border of the lower extremity.

The average platycnemic index for six male bones is 59·8, and for three female 66, and the lowest individual index, 52·6, represents a very marked degree of lateral flattening.

Stature.—Unfortunately the data are very meagre for the determination of stature. The indications are that the males did not exceed 5 feet 5 inches, and that the females fell short of 5 feet.

Skulls.—While a considerable number of skulls were found, the majority were broken into such fragments that it has been possible to reconstruct only a small number. Four were practically whole, and I shall give here a short description of these specimens.

The annexed table gives the measurements in detail.

Age and Sex.	Torlin.			Clachaig.		
	A. Past Middle Life M.	B. Adult M.	C.	A. Adult M.	B. Adult F.	C.
Cubic capacity	1480 c.c.	.....	.....	1580 c.c.	.....	.....
Glabello-occipital length	186	201	210	197	186	198 ap.
Glabello-nasal length	174	184	.....	191	175	.....
Ophryo-occipital length	181	197	.....	194	185·5	.....
Basi-bregmatic height	136	132 ap.	.....	132·5	132	.....
<i>Vertical index</i>	73·1	65·6	.....	67·2	70	.....
Minimum frontal diameter	96	.....	.....	102	103	.....
Stephanic diameter	120	114	.....	118	121	.....
Asterionic diameter	111	116	.....	111	116	.....
Maximum breadth	140	134	.....	139	139·3	140 ap.
<i>Cephalic index</i>	75·2	66·6	.....	70·	75	70·
Horizontal circumference	517	528 ap.	.....	542	525	.....
Vertical transverse arc	307	309	.....	298	300	.....
Longitudinal arc—						
Frontal segment	132	125	.....	136	128	.....
Parietal segment	125	125	.....	136	137	.....
Occipital segment	123	140	.....	123	.....	.....
Total	380	390	.....	395	376 ap.	.....
Length of foramen magnum	34	.....	.....	39·8	.....	.....
Basi-nasal length	99	.....	.....	98	97	.....
Proportion of vault to base	2·85	.....	.....	2·86	.....	.....
Basi-alveolar length	94	.....	.....	92	89	.....
<i>Gnathic index</i>	95	.....	.....	93·8	91·7	.....
Inter-zygomatic breadth	132	134	.....	139	135	.....
Inter-malar breadth	117	.....	.....	121	120	.....
Nasio-mental length .....	.....	125	.....	128	.....	.....
Nasio-alveolar length	67	70	.....	72	62	.....
<i>Complete facial index</i> .....	.....	94	.....	90·6	.....	.....
<i>Upper facial index</i>	60·7	52·2	.....	51·8	46	.....
Nasal height	53	55	.....	55	49	.....
Nasal width	24	24	.....	23·7	25	.....
<i>Nasal index</i>	45·2	43·6	.....	43·2	51	.....
Orbital width	41	.....	.....	43·5	43	.....
Orbital height	33	.....	.....	32	31	.....
<i>Orbital index</i>	80·4	.....	.....	73·5	72	.....
Palato-maxillary length .....	.....	54	.....	55·5	47·5	.....
Palato-maxillary breadth .....	.....	62	.....	65·5	60	.....
<i>Palatal index</i> .....	.....	114·8	.....	117	126·3	.....

An examination of this table and the views of the skulls, in the norma lateralis and norma verticalis, shows that, in spite of individual differences, they all belong to the same general type. The degree of diversity in the indices is more than paralleled in certain groups of Long Barrow skulls. In none is there any brachycephalic feature, and they all possess in an eminent degree the characters

of the dolichocephalic type. They are all, further, relatively low skulls, only one (Torlin A, Pl. XXXVIII, 1) rising into the metriocephalic group. All are more or less phaeozygous; the gnathic index places them all low down in the orthognathic series. The facial index is leptoprosopic in the male skulls, but in the female specimen it is chæmoprosopic, though this low figure is due, not to increase in breadth, but to the individual character of great lowness of the maxillæ. The nasal index is leptorhine in two, mesorhine in two; the orbits are microseme in all.

Of the four whole skulls, Clachaig A (Pl. XXXIX, 3) is the most typical, and I shall give a more detailed description of it. It is quite entire, only a small portion of the lower jaw being defective. It is the skull of a man in the prime of life, as the sutures have not begun to be obliterated, and yet the teeth show signs of considerable wear. Its cubic capacity, 1,560 c.c. of mustard seed, is well above the average of modern Scottish crania. The glabella and supraciliary ridges are well marked; the forehead is high and well arched. The vertex corresponds closely to the bregma, and for some distance behind this the vault is somewhat flat, and then descends in a long fairly gradual slope to the prominent occiput. The occipital point is placed well up to the lambda; the inion is prominent. The under-aspect of the occipital bone is depressed, so that the skull rests on it and not on the condyles. The great projection of the skull behind the auditory meatus is a very marked feature. The frontal and parietal arcs are nearly equal, and both are greater than the occipital.

The norma occipitalis is pentagonal in outline, and the walls of the skull are nearly vertical. The shape in the norma verticalis is a long oval, and the zygomatic arches are just visible. The face is long and oval, the nose high, and the orbits rectangular. The gnathic index places the skull well within the orthognathic group. The lower jaw has a massive body, but a flat chin, and the coronoid process is relatively low. The teeth are very large, the crowns of the molars are expanded, and are ground flat, the surfaces being oblique, inclining inwards in the upper and outwards in the lower jaw.

The lower jaws recovered were fifteen in all, and presented great variations in their proportions. In those certainly male the symphysis is deep, the lower border of the body is massive, and there is marked turgidity in the region of the molar teeth. The chin is square, flat, and vertical. The angle is well marked, but only in one instance is there any eversion. The jaws certainly female, on the other hand, showed a shallow symphysis with everted lower border; the body is slighter; the mental protuberance fairly well marked; the angle is open and the ramus is short and wide, the coronoid process is low, and the sigmoid notch is shallow.

A number of specimens are intermediate in their characters.

In the majority of the bones the mental foramen is placed farther back than is usually the case in modern bones, a character referred to by Professor Rolleston as characteristic of many Long Barrow skulls.

From this description it will be gathered that the type of skull is exactly

that of the "Long Barrow race," and the specimen Clachaig A bears a very striking resemblance in every particular to typical specimens of that type in the Greenwell Collection at Oxford. As compared with those of the Long Barrows of England, the Arran skulls are platycephalic to a somewhat exceptional degree, but this probably is only an accidental feature.

Only in one-sixth of the skulls of men (eight out of forty-eight) described by Thurnam,¹ did the height index fall short of the breadth index, but in more than one-third (seven out of nineteen) of the skulls regarded as female, this relation was observed. "The tendency to platycephaly is both much more frequent and much more marked in skulls regarded as female."

Among the skulls described and figured by Rolleston, the same holds true. The great majority of Long Barrow crania are "hypsi-stenocephalic."²

While the fairly numerous discoveries of their osseous remains in England have well established the existence and extension of the Long Barrow race in South Britain, in the north their existence has been inferred rather than actually proved, for very few skulls which can with certainty be referred to the Scottish Stone Age have been described.

As long ago as 1850, Sir Daniel Wilson came to the conclusion that the inhabitants of North Britain in the earliest times were dolichocephalic, but of the different specimens on which the hypothesis was founded, only one seems to have a possible claim to be of that age. It came from a large cairn near Nether Urquhart, which contained two large vaults or chambers, one of them 6 feet in length. This skull is in every respect similar to my specimens Torlin B (Pl. XXXVIII, 2), and C, which are typical examples of what Wilson named the kumbecephalic type. I believe they are only exaggerated examples of their class. The occurrence of this type in burials now classed as belonging to the Bronze Age is accounted for, like the occurrence of dolichocephalic skulls in the Round Barrows, by the survival of the earlier race among the intruding people. Such skulls as have been found in chambered cairns in Scotland are dolichocephalic. That discovered in the cairn of Get by Dr. Joseph Anderson, and described by Dr. Carter Blake,³ had, however, the relative high index of 76.

The two skulls from the Oban caves, described by Sir William Turner,⁴ are also dolichocephalic. The skull B, with an index of 70·2, closely corresponds with my specimen A from Clachaig, and the skull A, with an index of 75·4, is comparable with my specimen A from Torlin, the index of which is 75·2.

Short-Cist Builders.

The cranial characters of the people who buried their dead in short cists in North Britain are better established. Sir William Turner⁵ has given statistics of

¹ *Memoirs Anthropol. Soc.*, vol. iii, p. 65.

² *British Barrows*, Greenwell, p. 650.

³ *Memoirs Anthropol. Soc.*, London, vol. iii, p. 243.

⁴ *Proc. Soc. Antiq. Scot.*, vol. xxix, p. 410.

⁵ Royal Institution Lecture, March 26th, 1897.

seventeen skulls from sepulchres of this class in Scotland. The average index of twelve was 81·4, while in the other five it was 74, so that the majority were brachycephalic.

I have not been fortunate enough to find, in any short cist I have opened in Arran, a skeleton sufficiently well preserved to permit of the determination of anatomical characters, but two skulls have been described. They complete the evidence as to the primitive inhabitants of the island.

Both were found in short cists, but it is interesting to note that the first was discovered in a cist within a circle of standing stones; the second in a cist marked only by a slight mound.

Fig. 1 is a photograph of the norma verticalis of a skull found by James Bryce, LL.D., in a cist within the area of one of the Tormore circles.¹ It is preserved in the Museum of Antiquities in Edinburgh. Unfortunately the facial and basal portions are absent.



FIG. 1.—SKULL FROM SHORT CIST IN STONE CIRCLE, MACCHIE MOOR, ARRAN.

Professor Allen Thomson, who described it, gave such measurements as it was possible to take:—

Maximum antero-posterior diameter	...	7 in.	= 177·8 mm.
„ transverse	„	5·7 „	= 144·7 „
Greatest horizontal circumference	...	20·4 „	= 518·16 „
Antero-posterior arc, from root of nose to supposed site of external occipital protuberance	...	11·75 „	= 298·35 „
Frontal arc	...	4·8 „	= 121·8 „
Parietal arc	...	5 „	= 127 „
Distance from meatus auditorius to vertex	4	„	= 111·6 „

From these figures an index of 81 may be attributed to the skull; but apart from the relation of length to breadth, the shape and general character of the vault prove sufficiently that it has belonged to a brachycephalic skull.

The second specimen was found in a short cist at Knockankelly by Dr. Jamieson.² It was examined and described by Professor Cleland. With the skull were some of the bones of the trunk and limbs. Dr. Cleland reported that the bones were those of a boy of ten or eleven years of age and about 4 feet 2 inches in stature.

The long bones were strong and well marked for the age, the thigh bones were stout both in shaft and neck, and the linea aspera was well marked. The oblique line of the tibia was remarkably distinct, but there was no platycnemism.

¹ *Proc. Soc. Antiq. Scot.*, vol. iv, p. 469.

² *Ibid.*, vol. xx, p. 171.

The skull had been a well-shaped skull, but had suffered from posthumous distortion, and the right side was imperfect. The position of greatest breadth was placed in the course of the squamous suture. The amount of breadth was estimated by doubling the distance from the broadest part of the surface to the mesial plane.

Greatest breadth	...	...	...	...	...	6.25 in.
Greatest length	...	...	...	...	...	6.6 "
Coronal breadth	...	...	...	...	...	4.5 "
Zygomatic breadth	...	...	...	...	...	4.2 "
From between incisor teeth to front of foramen						
magnum	...	...	...	...	...	4.4 "
Height from front of foramen magnum	...	...	...	...	...	5.0 "
Orbito-nasal angle	...	...	...	...	...	90°

"In a skull so young, race-characters are liable to be masked by those of the particular age. But these measurements give a very high index of breadth to length, viz., 93; and even allowing for errors arising from the way in which the breadth is calculated, and from post-mortem distortion, it is obvious that this skull is as brachycephalous as those of the Short Barrows."

The Island of Arran thus conforms to the general rule for the country as a whole, that an earlier race of Dolichocephali were succeeded by a race of Brachycephali, but the fact that it is an island makes the evidence specially convincing. It is impossible to think of two races in different phases of culture simultaneously occupying the very limited area available for habitation; and further, in one of the cairns excavated, there was a segmented chamber at one end, and at the other, a short cist which presented all the characters of a secondary interment.

It is a striking fact that whereas short-cist interments have been discovered in every parish in Scotland, perhaps, and stone implements found in abundance in every district, the burial places assigned to the neolithic race are confined to the extreme west and north of the country. Further, the northern and south-western groups differ in their structural features, for while the northern chambers, in Caithness and the Orkney Islands, have always a passage of entrance, the latter have no such passage, but at most only a portal. In Argyllshire, about Loch Awe and Loch Etive, both varieties occur.

So far as I know, no structures, such as occur in Arran, are found anywhere save in Ireland, where they are found in the same denuded condition as most of the examples in Scotland; while in Scotland, so far as yet known, they occur only in the south-west corner—in Arran, Kintyre, and Islay, and as far north in Argyllshire as Crinan.

For this distribution of megalithic or chambered cairns a number of explanations suggest themselves.

(1) As the parts in which they occur are remote and generally uncultivated, they are survivors only of a type of sepulchral structure once generally distributed,

but now demolished during the course of centuries of cultivation, in the eastern and midland counties. The great number and general distribution of the megalithic monuments in Ireland is against such a view.

(2) They represent a type of custom and culture which characterized only one phase in the occupation of the Iberian race, at a period when they were already being driven westward. The occurrence of their works in the west and north, would thus represent merely a persistence in those remote parts of a culture displaced elsewhere. A combination of the first and second alternatives states what is, perhaps, the generally accepted explanation.

(3) Whatever may have been the distribution and extension of the primitive Dolichocephali in the earlier neolithic period, of which next to nothing is known, the late neolithic Iberians of the chambered cairns and megalithic monuments achieved only a partial occupation. Successive waves of immigration spread from the north-west corner of France along the west coast of England, up the Irish Channel, and direct over to Ireland, in which alone the movement was from east to west.¹

For this last alternative some support is afforded by the sharp localization, in the south-west corner of Scotland, of structures with Irish affinities, and also by the occurrence here of a class of pottery apparently not represented in England, but with close resemblances both in shape and type of decoration to that of the Dolmens of North-West France and the Pyrenees.

I would therefore refer the Arran Dolichocephali to a late period of the Neolithic Age, and to, probably, a late wave of immigration from the north-west corner of France, which spread directly up St. George's Channel and not by way of the mainland, at a period when the Brachycephali, possibly in a phase of their culture antecedent to a knowledge of metals, were already spreading northward from the south and east. These met their Iberian predecessors in Arran, probably in the transitional period, and established there, as elsewhere, a type of custom and culture which flourished and prevailed during the Age of Bronze.

POSTSCRIPT.

Since this paper was submitted to the Institute, I have made further explorations in Arran. Unfortunately no skulls nor bones were obtained; but the excavation of a great cairn, remotely placed among the hills, has made it possible to describe with some approach to certainty, the original condition of the remarkable segmented megalithic structures which occur in the island. The cairn is 100 feet long by 60 feet broad; at one end is a circular setting of stones, two of the members of which form the side stones of a portal, leading into a chamber which occupies one end of the cairn. This chamber was roofed in by five large flagstones, which rested on smaller flags built on one another, and the upper course of these considerably overlapped the lower courses inwards. The upper section of

¹ Cf. Borlase, *The Dolmens of Ireland*.

the chamber walls was thus built of small stones, like a dry stone wall, but the deeper portion, on the top of which this wall was built, consisted of massive blocks set opposite each other, on the marginal outlines of an oblong rectangular space, or narrow and trench-like chamber, subdivided into four compartments or cists by massive slabs set across it. Entrance to the chamber is obtained through a narrow portal placed some distance above the floor at one end of the chamber, the other end being closed by a tall stone extending from floor to roof.

The general conclusion previously reached, that the megalithic structures in Arran belong to the late Stone Age, has been fully borne out by the later researches; but it has now been ascertained that the denuded megalithic cists represent merely the basal portions of chambers, which were roofed in by large flagstones, resting on an upper walling of smaller flags superimposed on the basal megaliths so as to form a level surface for the support of the roof; further, that there was in no case a passage of approach, but merely a portal of entrance at one end, from a circular, or semi-circular, setting of standing-stones in front of it.



Fig. 1.—Skull A from Torlin Cairn, Arran.



Fig. 2.—Skull B from Torlin Cairn, Arran.

PREHISTORIC HUMAN REMAINS FOUND IN THE ISLAND OF ARRAN.

(From block lent by the Royal Society of Antiquaries of Scotland.)



Fig. 3.—Skull A from Clachaig Cairn, Arran.



Fig. 4.—Skull B from Clachaig Cairn, Arran.

PREHISTORIC HUMAN REMAINS FOUND IN THE ISLAND OF ARRAN.

(From block lent by the Royal Society of Antiquaries of Scotland.)

SOME PRELIMINARY RESULTS OF AN EXPEDITION TO THE MALAY PENINSULA.¹

BY NELSON ANNANDALE AND H. C. ROBINSON.

[PRESENTED DECEMBER 9TH, 1902. WITH PLATE XL.]

WE commenced by spending nine months in the Siamese Malay States on and near the East Coast of the Malay Peninsula, making two short expeditions into the centre of the country, in order to see the aborigines of this district. We then made our way overland to Penang *via* Singora and Kedah. At the beginning of 1901 we spent about two months in the Batang Padang district of South Perak, staying for a fortnight at a high altitude just within the state of Pahang. After this Robinson was detained at Kuala Lumpor in the state of Selangor, and I² went on alone to Upper Perak. There I spent nearly a month, and, after crossing overland to Patani, made my way through Singora and Patalung to Trang on the West Coast, where I spent some days. We met again in summer and paid a couple of brief visits to a tribe of Sakais in the neighbourhood. The shaded portions of the map (Fig. 1) represent the districts in which we worked, the lines our journeys.

Measurements, more or less complete, of about four hundred individuals were obtained, about ninety of our subjects being representatives of the wild tribes.³ We aimed at taking the whole of the measurements provided for in the first two sections of the British Association's schedule in each case, but, especially when I was working alone, this was often found impracticable. In about two hundred instances the head measurements were taken three times over for the sake of greater accuracy. The subjects were with few exceptions adult men between the ages of twenty and fifty, as we thought it best in the limited time at our disposal to obtain as large a series of one sex in each tribe as possible. They were

¹ It may be well to state how the investigations, of which a preliminary account is here given, came to be undertaken. At the beginning of 1901, Sir William Turner suggested that I should obtain measurements of the people of the Siamese Malay States, which I was hoping to visit for the second time, and a grant of £100 was made towards my expenses by Edinburgh University from the Earl of Moray Fund. Mr. Robinson agreed to accompany me and to take a joint share in such zoological and anthropological work as we might be able to do. Through the kind offices of Professor Hardman, of Liverpool, another grant of £100, that had been made me by the Royal Society from the Government Fund, for a definite piece of zoological work, was transferred at the beginning of the present year to the general purposes of our expedition, and was chiefly expended in investigating the people of Perak.—N. ANNANDALE.

² As the preceding foot-note indicates, the authority for all these statements which are made in the first person singular, is Mr. N. Annandale.—Ed.

³ We include in this term all tribes that are neither Mahommedan nor Buddhist.

measured as they came, and no attempt was made to pick out individuals whom we might consider typical. Specimens of the hair of over three hundred persons

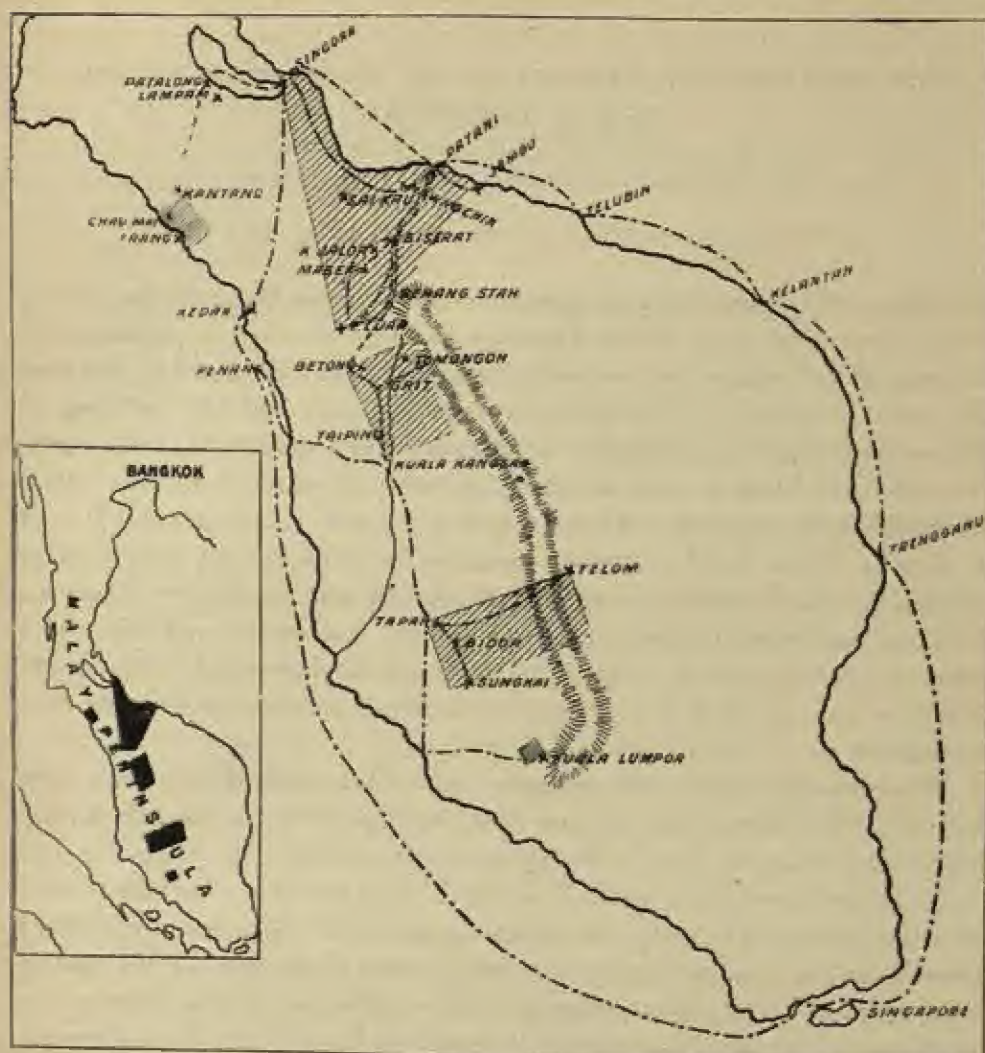


FIG. 1.—SKETCH MAP OF MALAY PENINSULA, SHOWING ROUTES FOLLOWED, COLLECTING STATIONS, AND AREAS COVERED BY THE EXPEDITION.

were obtained, and thirty skulls, a large proportion of which were accompanied at least by the limb bones and pelvis. Two-thirds of them represented the wild tribes. There has not yet been time to examine the osteological material.

I. CIVILIZED TRIBES.

Malayo-Siamese of the East Coast States.

The Malays and Siamese of the district between Singora and Jambu are a brown-skinned people of somewhat variable complexion, ranging from an almost clear yellow to a dark reddish-brown. Their heads are decidedly brachycephalic,

and their noses usually negroid and broad, though great variation exists in this respect. Their mean height is about 5 feet 2 inches. Two distinct types exist among them, one of which has a more massive face, greater stature, and a more clumsy build than the other; but intermediate individuals occur, and a large series of measurements shows that neither type is associated with one people or the other. Without measurements the seeming difference between the two peoples, produced by the different ways in which they brush their hair, is apt to be deceptive, but wavy, and even curly hair is certainly more common among the Siamese, instances of this among the Malays being very rare. A true "third eyelid" is as a rule absent, though the eye is generally of a somewhat Mongoloid appearance. The curly hair of a few individuals, being often associated with a darker complexion and a lower stature, probably points to some admixture of aboriginal blood; indeed, the aborigines appear to have been absorbed almost completely into the settled population which, at any rate near the coast, is apparently as dense as in any part of the Peninsula not occupied by a large town. The peasantry seem to flourish under Siamese administration, and life is undoubtedly easier for them than in the British states.

The main division between the two peoples in this district is that of religion, the Siamese being Buddhists, and the Malays Mahommedans. In both cases conversions occur, and a Malay who has become a Buddhist calls himself a Siamese, while the converse is true of a Siamese who has entered Islam. The Malays loathe pork, circumcise their children or youths, and have a theoretical contempt for infidels: the Siamese visit the temples, give presents to the monks, and in the majority of cases enter monastic orders themselves for a year or two; but in both cases religion practically resolves itself into a dread of ghosts and spirits.

The population consists of rice-cultivators and fishermen, the latter being solely Mahommedans, and a few weeks' labour in the year provides both classes with food, clothing, and pocket money. Drunkenness is practically unknown, and opium-smoking—which, for some reason, is almost universal in such villages as are connected with the care of elephants—is usually practised with strict moderation, and is very local in its distribution.

The chief amusements of the populace are bull-fighting, cock-fighting, theatrical and magical performances. Cock-fighting and bull-fighting afford the only legal means of gambling, and in the former the use of artificial spurs is forbidden, while the latter is a mere contest of strength between two bulls, in which little, if any, blood is usually shed.

Malaria is common in this district, though of a mild type and often associated with a journey. Beri-beri, so far as we were capable of judging, is either altogether absent or very rare. Ulcers and skin diseases are common, and in some villages intestinal and pulmonary complaints are widely spread. An epidemic of small-pox decimated the country about three years ago.

The Malays practise interment with Mahommedan rites, placing a piece of

iron on the breast of the corpse before burial, to "keep off Satan." Cremation is the recognized means of disposing of the dead among the Siamese, but burial is not unknown, and the ancient custom of hanging up the corpse in the branches of trees is still practised in secret, though it has been illegal for many years and is quite repugnant to the ideas of Bangkok Siamese.

The Chinese element in the population is smaller and far less important than in the western states. It is also, perhaps, less pure, having inter-married to a great extent with the Siamese. The families of these mixed marriages are usually larger than those of purely native unions, which are rarely prolific. The children of Chinese fathers rank as Chinese.

The modern Indian element is so small that it may be neglected.

More detailed analysis of our series of measurements shows a slight difference between those people who live near the coast, and those inhabiting the country nearer the centre of the Peninsula.

Malays of South Perak.

Passing to the Malays of South Perak, we find certain physical differences, which are not, however, so great as might have been expected. The Malays of South Perak are a slighter people, and have more refined features than those of the Siamese states, and their faces are not so flat. A certain difference in colour has been produced by the fact that the Perak Malays keep the upper parts of their bodies covered. Their hair is almost invariably straight, though the forcible abduction of Sakai concubines was, until recently, not uncommon, and the children of such unions were brought up as Malays. British rule, and the contact with Europeans, have rendered the Malays shy of ridicule, and such old customs as they still observe are concealed from the eyes of white men.

The apparent increase in the Malay population of Perak between 1881 and 1901 is, we believe, chiefly, if not entirely, due to immigration; all those persons who do not belong to any Mongoloid Mahommedan race noted in the official census schedules being put down simply as Malays, while the second generation of practically all Mahommedan immigrants is also classified in this way. No distinction is drawn between Malays who are really, as their own phrase goes, "sons of Perak," and those who have come over from non-British parts of the Peninsula, and have settled for a few years in Perak, only waiting to return home until they shall have made a little money. It must be remembered also that the greater part of Perak has never been colonized by Malays, who have restricted their occupation to the sea-coast and the main valleys of the Perak and Kinta rivers.

The Chinese element in the population of Perak now far exceeds that of any other race; and Southern Indians, if the planting interests ever increase, will probably soon be as numerous. In their own country Malays will not work. Under Siamese administration they need not do so to any considerable extent; but British occupation means money-making, an art in which the Chinaman is an adept and

the Tamil an apt pupil. In the Federated Malay States two alternatives lie before the indigenous population; they must forego their dignified leisure, or they must perish, as a race, in the march of progress. The latter alternative seems to be the one they are choosing.

Malays of Selangor.

In the state of Selangor there appears to have been no settled Malay population until comparatively recent times. Even the royal family of this state is said to be of Bugis extraction, and the people, leaving the Chinese and Indian elements out of count, are chiefly either recent immigrants from Sumatra and Java or jungle tribes.

Malays of Kedah, Upper Perak, and Ulu Rhaman.

The people of Alor Stah, the capital of Kedah, and the neighbourhood, closely resemble the Malays of South Perak in appearance, and we were much struck, on our journey across the Peninsula from Singora, by the way in which the more refined type of Malay appeared to take the place of the coarser Siamese type of the East Coast as we crossed from the state of Singora into Kedah. But details of costume and the like, and chance meetings with extreme types, create an impression that is often more lasting than one based on careful study.

The Malays of Upper Perak and the adjacent district of Rhaman and Kedah certainly differ from those of South Perak. Unfortunately schedules containing measurements of twenty individuals have been lost, but they showed that the people had shorter heads and wider faces than the other Malays we investigated. They also were of a slightly paler complexion, and had straight hair, except in certain villages where a proportion of the inhabitants were aborigines lately converted to Mahommedanism.

Samsams or Orang Laut Islam of Trang.

At the mouth of the Trang River, and on a small island off the coast I obtained a series of head measurements representing fifteen men of a very similar race who called themselves Orang Laut Malayu, or Orang Laut Islam (Mahommedan Sea Men), and were known to their neighbours as Samsam, a term that they acknowledged was applicable to their language but considered insulting when applied to themselves. The word "Samsam" in Malay is regarded as somewhat analogous to "Serani" (Nazarene), the latter being applied to persons of mixed European and Oriental descent, and the former to those whose ancestry is partly Malay and partly Siamese. These Samsams had the shortest heads of any, and the broadest faces of any *civilized* race, that we investigated; but it must be remembered that this statement is based on a comparatively small series of measurements. They call themselves "Sea Men" because, though they have ricefields and villages up the rivers, they spend a part of every year by the sea, fishing oysters and trepang.

Their Mahommedanism is lax, and I was told that a youth who has been circumcised and has entered Islam, but has suffered illness or misfortune there-

after, not infrequently becomes a Buddhist monk. If Mahommed will not aid him he calls upon Moses, whom the Malays and many of the Siamese believe, for some obscure reason, to be the same person as Buddha.

The Samsams speak Siamese with an admixture of Malay words and phrases. No attempt is made to intone these, so that they strike the ear and possibly appear to be a more important element in the dialect than they really are.

It is curious to notice how the weapons of the Samsams, though their several parts are Malay, outrage all Malay conventions, having not infrequently blades of one recognized type, handles of a second, and sheaths of a third. The pellet bow is better developed here than in Patani and Nawngehik.

The Siamese of Trang, who form the bulk of the population in most districts, differ considerably in appearance from those of Patelung, where I calculated, from a very large number of men whom I saw at work on the roads, that ten per cent. of the adult male population had curly hair. Unfortunately it was not possible in the time at my disposal to obtain measurements.

In some parts of Trang there is a large Chinese population engaged in pepper-planting.

There are said to be only two persons now left in Trang, who claim descent from the Prám or Brahmins who traditionally occupied this part of the Peninsula before the coming of the Siamese.

II. WILD TRIBES.

Orang Laut Kappir of Trang.

The Orang Laut Islam claim to have no connection with the Orang Laut Kappir or "Infidel Sea Men" of the coast and islands of Trang, but it is probable that inter-marriage has taken place, if they were not originally one people, as the two until lately occupied the same fishing-grounds and camped in the same localities. I am not at present in a position to say more regarding the ethnology of the Orang Laut Kappir than that they are a straight-haired, yellowish brown-skinned people, with somewhat Mongoloid features and eyes, but it seems likely that they may be related to the people of the Mergui Archipelago. Possibly they are in no way connected with the Orang Laut of Singapore, and there is nothing to show, until the skulls collected have been compared with those from Perak, whether they are related to the Sakais, whom the few that I saw resembled in general appearance.

Recently the Orang Laut Kappir have to some extent forsaken their seafaring life, and have settled down upon the islands on which they formerly encamped. Their houses are mere shanties of palm leaves, and their boats have as foundation a hollowed tree trunk, on the sides of which a superstructure of the stems of small palms is fastened by means of bamboo skewers in such a way as to be practically watertight. They do not use blowguns.

Formerly they brought their dead in hollowed logs to certain caves and sacred places on the mainland, and there deposited them, with food, clothing and curious little wooden swords. They told me that they made offerings to three spirits in the sky and two in the sea, but refused to give me the names of their deities.

They are strictly monogamous, and divorce is said to be unknown among them. Two youths whom I met had been betrothed for nearly two years.

They say they are the same people as the Orang Bësing of the islands off the Siamese state of Renong and Victoria Point in Tenasserim who have a language of their own; but they themselves use a dialect of Malay in which apparently non-Malayan words exist, and which appears to make greater use of prefixes than the dialects of Patani and Perak.

"Semangs" and "Sakais."

Leaving the Orang Laut Kappir out of the question, there are apparently, or rather have at one time been, two wild races in the districts visited. For the sake of convenience we will retain the terms "Semang" and "Sakai," but there are grave objections to the use of both of them. While the Semangs appear to be of a fairly pure stock, those tribes which we have called Sakai show evidence of the admixture of two races, one of which is probably identical with the Semangs and the other Mongoloid. The mixture has taken place in such varying proportions that it is hard to formulate any valid difference between a Sakai and a Semang, for while some Sakai tribes are quite different from Semangs, in others the distinction is very much less obvious and, indeed, hardly applies to individuals.

We believe that the Mongoloid element, at any rate in some of the Sakai tribes, is not identical with that of the modern Peninsular Malays, and that possibly it has not been the same in all cases. We gained no evidence of the existence of purely Mongoloid jungle people in Perak or the Siamese Malay States, though such tribes are said to exist.

Semangs.

(a) *Semán of Upper Perak and Ulu Rhaman.*—At Janing and Grit in Upper Perak and at Krunei and Jarum in Ulu Rhaman I saw about fifty individuals of a tribe that called itself Semán and was known as Sakai Jeram (Sakais of the Rapids)¹ to the Malays of the district, who applied the name Sémang to the Pô-Klô or Hill Sakais who lived across the Perak river. The Semán do not object to be called Sakais. Those whom I measured averaged about 5 feet in height, had broad negroid noses, heads that were moderately long, and very broad faces.

As a rule they were prognathous, but not to an excessive degree. They were very uniform as to their complexion, which was darker than that of most Malays and Siamese, but never black. Their hair covered their heads in short close curls, except on the top where there was almost invariably a frizzly tuft about 5 inches

¹ The name is given them on account of their skill as raftsmen.

long. With the exception of this tuft, which is rarely interfered with, they shave their heads regularly, or as often as opportunity occurs, commencing the practice in early childhood. A few individuals who had not lately come across a razor had the rest of their hair almost as long as the top-knot, and could easily have produced the semblance of a Papuan mop by means of careful combing. Both sexes had for their only clothing a narrow bandage of bark cloth, or cotton procured from Malays or Chinamen, and the women wore in addition a characteristic belt made from a fungus, looking upon this, not as an article of clothing, but as a prophylactic against disease.

The Semán are divided into numerous camps of about twenty individuals each, which are quite independent of one other, but have each a chief and owe allegiance to a Malay *tuán* or master. For the latter, who has some means of summoning them at will, they work at harvest time in the fields and gather jungle produce in the woods, receiving in return rice, cloth, knives and the like. They have no fixed place of residence as a rule, but confine their wanderings within a restricted area. Like all the other races, wild and civilized, with whom we met, they usually practise monogamy, for economic reasons. They build rude shelters consisting of screens of leaves, and often arrange them round a large tree. Their only weapons are blowguns, and they carry their poisoned darts either loose in their belts or enclosed in a bamboo stoppered with leaves or fibre.

They dread the spirits of dead men and those of the jungle, and are said to desert the place where a death has occurred as soon as they have buried the corpse, even if in the middle of the night. The only grave that I saw was on a Malay model.

Ringworm is almost universal among the men, but apparently rarer in the case of women. They are not immune to malaria, and have many kinds of amulets against what they call "hot rain," i.e., hot damp weather, which they believe to be the cause of fever. They can only count up to two in their own language, and their individual names are derived from their birthplace or from some circumstances connected with their birth.

(b) *Hami of Ulu Jalor*.—At Mabek in the interior of the Siamese state of Jalor we met five individuals, four men and a woman, of a tribe calling itself Hami or men. Their Malay master, who was most unwilling that we should see them and pretended to have no influence over them, called them Pangbhan. They were shorter and slightly paler in colour than the Semán. The woman's frizzly hair stood out 4 or 5 inches from her head, but that of the men, who wore no top-knot, was short and woolly. The woman wore a girdle like that of the Semán. These people were, we believe, members of the Semang stock, which probably extends its range for some considerable distance northwards.

Sakais.

(a) *Pò-kló and Jehchr of Upper Perak*.—At Temongoh, some distance north of Grit, but on the other side of the Perak River, the place of the Semán is taken by

two Sakai tribes, the Pô Klô, Sakai Bukit or "Hill Sakais," and the Jehehr or Sakai Tanjong, i.e., "Sakais of the Capes," so called because they often encamp on little capes jutting out into the river. They differ from one another in dialect and customs, but appear to be racially one, the hill men being in every way more healthy and robust than the river men, and also having slightly paler complexions, but otherwise being indistinguishable from them. Considering the two tribes together, we find that they are very closely related to the Semán, whom they resemble in the proportions of their head, but from whom they differ in having yellower skins and, what is more important, in the fact that the hair of some individuals is not woolly but only slightly wavy. Both tribes shave their heads, but the Sakai Bukit do not wear a topknot.

The Sakai Tanjong are, like the Semán, serfs of Malay masters, and appear to be a degraded tribe, almost every implement they have being procured either from the Sakai Bukit, Malays or Chinamen. They themselves and the Malays assured me that in the Jehehr dialect there were no names for the numerals, and several questions requiring a numerical answer were replied to by the requisite number of fingers being held up in silence. They do not bury their dead unless forced to do so by the Malays, but either leave them in the jungle or throw them into the river.

The Sakai Bukit owe allegiance to no one. They make large clearings on the sides of the hills, and live chiefly upon a kind of millet. Many of them refuse to eat rice, alleging that it makes them sick. They make and use bows and arrows, of which they are very jealous, though they sometimes sell them to members of the other jungle tribes with which they come in contact. Their dart-quivers are beautifully decorated with incised patterns said to represent the argus pheasant. The women of the Pô-klô and Jehehr do not wear the fungus girdle, though the same substance is used by them to make necklaces and bracelets.

(b) *Mai Darát of South Perak and the Pahang Border.*—In the Batang Padang district of South Perak and at Telom in Pahang the Sakais call themselves Mai Darát, and are addressed by Malays as Orang Darát, "Men of the Country," for the term Sakai is considered insulting in this part of the peninsula. The Mai Darát are a people of paler skin, especially on the face, than the Semán, being in many cases fairer than Malays and occasionally not much darker than southern Chinamen. They are of about the same height as the Semán, whom they resemble in the proportions of their bodies and heads. Their noses are a trifle less broad and their hair apparently longer. Some of them dress it so as to form a mop of great dimensions, but the majority now cut it short except for a fringe in front. In many cases it falls in long ringlets, not being of the correct texture to form a mop. The women not infrequently dress it with abundant oil and smooth it out as much as possible, probably in order to look like Malays. In a few cases we found the "third eyelid" well developed. The development of the upper part of the body often seems disproportionate to the lower limbs, and the breasts are sometimes considerably developed in the men. Otherwise their figures are

graceful. Their walk, which resembles that of the other jungle tribes, has the peculiarities that have often been noted.

In this district it has only been the opening of the country under British administration within the last few years that has brought the Sakais in contact with the Malays, of whom they are very afraid. As a rule they get on well with Europeans, and are on excellent terms with the Chinamen in their neighbourhood.

They make large clearings in the jungle and several families live together in houses resembling those built by the Malays in their own plantations. Those clearings which are situated high up in the mountains appear to be larger and in better condition than those in the neighbourhood of Malay villages; for the Mai Darát often live at an elevation of over 4,000 feet. Their staple food is millet and yams, wild and cultivated, but they do not disdain rice. They breed large numbers of fowls and keep wild pigs and other animals as pets, having a breed of dogs quite distinct from the pariah of the Malay villages. The fowls they sell, chiefly to Chinese miners and pedlars, but they will on no account eat or kill any animal which they have fed themselves. On a journey the dogs are tenderly carried by the young women. The women wear Malay *sarongs* or short petticoats of bark cloth, and their hair is decorated on festal occasions with scarlet blossoms, bunches of fibre, bamboo combs, and fillets of fine bark cloth painted with coloured patterns. The men dress, when in the jungle, in the same manner as the Semán. Both sexes paint their faces and bodies, and the men often varnish their noses. Certain black marks upon the face, as also among the Semán and Sakais of Upper Perak, are regarded as charms against thorns.

The Mai Darát desert their clearings on the occasion of a death in the camp, only returning at certain stated intervals to make offerings of food upon the grave. All the possessions of the dead man are buried with him, being either placed in a chamber below the level of the ground but above that of the actual grave, or laid beside the corpse. Disease of all kinds is believed to be caused by spirits known as *nyani*. These the magician induces to come out of the sick person and take up their abode in rude figures of grass, which are hung up outside the houses in little bell-shaped shrines decorated with peeled sticks, comparable to those used in Japanese ceremonies, but on a smaller scale.

(c) *Orang Bukit of Selangor*.—The Sakai tribe to which we paid a brief visit in Selangor resembled the Mai Darát in physical characters, but showed a closer approximation to the Malay type, as might have been expected in a district where even at the present day Malays occasionally take to the woods and become members of a jungle tribe. These Sakais called themselves Orang Bukit, and were said to be distinct from the Orang Laut of the coast of Selangor. Of the latter tribe we only saw a single family, which came to visit the State Museum at Kuala Lumpur. They had wavy hair and were indistinguishable in appearance from the Orang Bukit, but we did not obtain measurements of them, and our series representing the Orang Bukit is small. In measuring the head of a woman of the latter tribe we discovered, somewhat to her embarrassment, that a large proportion



1. Seman man and woman, Grit, Upper Perak.



2. Siamese man, Bau Sai Kau, Nawngchik.



3. Siamese man, Bau Sai Kau, Nawngchik.

SOME PRELIMINARY RESULTS OF AN EXPEDITION TO THE MALAY PENINSULA.

of her hair was false. She had purchased the combings of a Chinaman's pigtail and fastened them among her own locks.

The measurements and indices printed in the following table are, we believe, characteristic of the different tribes investigated, and their indications of relationship or the reverse are, on the whole, well borne out by the more complete details that we hope to publish shortly. Only adult males are at present noticed. The figures in brackets *after* some of the items signify that the number of individuals to which those particular items refer is different from that from which the other means in the same line are deduced. The figures in brackets *below* are the extremes of the series.

No. of subjects.	Tribe.	Locality.	Cephalic Index.	Nasal Index.	Height. mm.
15	Samsams (Orang Laut Islam).	Trang (West Coast).	83.68 (77.7-89.8)	86.9 (73.1-105.4)	1602 (1507-1670)
90	Siamese	East Coast States	82.80 (59) (77.2-89.1)	81.4 (62.0-104.4)	1599 (1421-1718)
135	Malays	East Coast States	82.77 (75) (76.8-91.3)	82.6 (62.0-110.5)	1597 (1514-1795)
36	Malays	South Perak	82.32 (76.7-90.9)	80.9 (71.4-90.8)	1594 (1488-1763)
10	Sakais (Orang Bukit).	Selangor	79.55 (73.6-85.5)	88.0 (76.1-102.6)	1565 (1462-1690)
34	Sakais (Mai Darát)	South Perak	78.56 (73.2-82.7)	91.8 (78.2-110.7)	1524 (1411-1638)
10	Sakais (Pó-Klô) ...	Upper Perak	78.11 (73.7-85.2)	95.7 (88.9-102.3)	1545 (1477-1574)
9	Sakais (Jehehr)	Upper Perak	77.59 (73.8-82.3)	95.4 (88.6-102.6)	1542 (1438-1590)
20	Semangs (Semán)....	Upper Perak	77.86 (74.4-81.1)	97.04 (80.4-108.7)	1520 (1372-1604)

INITIATION CEREMONIES OF NATIVES OF THE PAPUAN GULF.

BY REV. J. HOLMES.

[PRESENTED NOVEMBER 11TH, 1902. WITH PLATE XLI.]

THIS preliminary paper makes no pretence to be an exhaustive study of the initiation ceremonies of all the tribes of the Papuan Gulf. It has reference only to the ceremonies of initiation observed by the tribes living in the district of Elema, the coast territory lying between Cape Possession on the east and the Alele river on the west.

In the quest for information on the customs and ceremonies associated with initiation, as observed by these tribes of the Elema district, one recognizes, only too fully, the manifold difficulties that oppose a successful and absolutely accurate version of what initiation means to the initiated savage, and a just appreciation of the inner meaning of the ceremonies attendant thereto.

To him initiation is all-important. On the performance of the instructions he received as an initiate the social and moral welfare of his tribe depends; as an individual he is only a unit of his tribe, but as such he must always conduct himself in all things for the highest interests of his tribe. The knowledge he acquired when an initiate must ever be to him a sacred possession, and not be imparted to the uninitiated; although on all topics outside initiation he is communicative, and never happier than when he can give information to inquirers after knowledge. He knows a great deal about the mammals, birds, reptiles, fishes, trees, shrubs, and plants of his district, and all these he will freely discuss and their respective value to him and his people; but approach him on the topic of initiation and he immediately becomes sullen and silent; over that period of his life a veil is drawn, and he resents any attempt on the part of the uninitiated to draw it aside to peer within.

Having to combat such rigid reticence on the part of those who have it in their power to make known in detail the ceremonies of initiation, it is evident that much of the information we have obtained will be open to corrections as our knowledge of these tribes advances.

An effort will be made in this paper to state the stages of initiation in the sequence observed by the initiates. It must, however, be remembered that the names given by the outsider to the respective stages, are not in every case the same as those used by the initiates, neither are these names common to all the tribes of Elema.

The various stages of initiation are marked by feasts given by the relatives of initiates, and the most important item in these feasts is the native pig. Unless the father or male guardian¹ of the boy who is being initiated provides a pig for each stage in the boy's initiation, the boy is marked henceforth as not having been fully initiated; this is a serious matter to him when he becomes a man, and debars him from many privileges as well as lays him open to many a taunt and insult from his compeers.

A small boy from birth until he reaches the age of about ten years, is said to be a *siare*; after the age of about ten years, he is said to be *siare sora* until he enters the *eravo*² for initiation. During this period, and when he is about the age of five years, the first step toward his initiation is taken by his father or male guardian, who prepares what may be termed a dedicatory feast and known by the Moreaipi tribe as the *meaulave* feast. The object of this feast is to give the father or male guardian an opportunity to declare to the relatives of the family in particular, and the tribe in general, that he purposes, at the proper time, to have the boy, in whose honour the feast is given, fully initiated as a member of the tribe. This feast is purely a family affair; pigs are killed, large quantities of food are cooked, and great attention is given to the distribution of the food, so that the maternal relatives of the boy being dedicated may have a very ample share of the food. This distribution of the food to the maternal relatives of the boys has important significance; it intimates to them that in future the father or male guardian of the boy will have the boy as his sole charge. Further, it is a declaration to the tribe, that the father or male guardian, by this public act, becomes responsible for all the fees, in pigs and other kinds of food, that will be demanded as the boy passes through the respective stages of his initiation.

After this feast the boy spends more of his time with his father than hitherto, when he was the special charge of his mother; he now has his head shorn or shaven completely, with the exception of two little tufts, one on the crown, the other about an inch behind the forehead.

When the boy reaches the age of ten years and is known as *siare sora*, he proceeds to the *eravo* in which he is to be secluded for an indefinite period, which is short or long as he develops quickly or otherwise; he now learns that he is about to take a very important step in his life's history, for within a short time he will be introduced to the mountain god, Kovave.

On entering the *eravo* for the period of seclusion, the boys, hitherto known as *siare sora*, become known collectively as *malai-asu*, while individually they are called *heava* among themselves, and as such they are now allowed to grow their hair, to oil their bodies, and, generally, to assume those kinds of ornaments that belong to the stage they have recently reached. Almost simultaneously with their becoming *heava*, the forerunners of the mountain god Kovave appear in the village in the

¹ On the death of the father one of his brothers acts as guardian to his orphan nephew.

² This is the large men's house, which has been termed club-house or temple by various writers.

form of a number of young men wearing conical masks, painted in grotesque designs of human faces, and draped with long grasses reaching down to the knees of the wearers. The arrival of the forerunners of Kovave in the village is a serious matter to the females, young and old, also to the uninitiated male members of the tribe. Amongst the latter are boys or men who are of illegitimate birth, and who, therefore, are not eligible for initiation. The masked men are supposed to be sacred: formerly it was permitted to them to kill anyone who tried to identify them, providing the curious one was a woman or an uninitiated man. Not only is their person considered sacred; it is claimed for these messengers of Kovave that they too, are gods; and, as proof of their deity, the native sage remarks that they do not need to walk on the soles of their feet as mortals have to do, but that they hop about as is characteristic of gods.

On the arrival in the village of these messengers of Kovave, the drums are beaten and the conch-shells are sounded as a warning, to the uninitiated, of the presence of the gods in the village.

For a period of about ten days these masked men prance about the village; for a like period, every night after sunset, the whining of bull-roarers, interspersed with much beating of the drums in the *eravo*, and an occasional march through the village, keep all the women and children in their houses in a state of terror lest some great evil may befall them if they wander abroad and are seen by any of Kovave's representatives.

During this period of about ten days, the women are constantly reminded by their husbands and male friends of the importance of having an abundance of food in readiness for Kovave when he arrives. When the food is all ready, a greater noise than usual is made in the village the night before the assumed arrival of the mountain god himself. In the early morning, as soon as the sun has risen, the men rush out from the *eravo*, armed with bows and arrows, and shoot the pigs that have previously been brought together in readiness for slaughter. These are quickly quartered, and hung on poles in front of the *eravo* in which the new initiates are secluded. Near this *eravo* are cross-poles on which the women hang the food (sago, banana, fish, betel nuts, etc.), as their contribution to the feast to be given to Kovave.

Long before noon, the messengers of Kovave come into the village from the bush to announce the arrival of Kovave, and to request that they may be laden with food to take to him to appease his hunger. The old men now step forward and give the portions of food to Kovave's representatives, who prance away with it toward the bush, and continue to do so until all the food is taken to the bush. All things for the feast of Kovave are by this time in readiness in the bush, and the place is tabooed to the women, children, and uninitiated members of the tribe. As soon as night sets in and the village is in darkness, the novices—now known as *malai-asu* or *heava*—are formed into Indian file and marched into the bush, where Kovave is supposed to be staying.

Each boy is accompanied by his father or male guardian, who stands by him

until he is acknowledged by the mountain god, and returns with him to the *cravo*, that there he may impress upon him the importance of what he has experienced in the bush.

On arrival of the boys in the bush, it is so dark that they are unable to see anyone, but presently they are addressed by a feigned voice, that they cannot recognize, but are informed it is Kovave speaking to them.

He promises them to become their friend, as long as they keep all secrets in connection with their initiation, but if they divulge these secrets to the uninitiated, he will punish them with disease and death.

After this injunction to absolute secrecy, each boy, quite unexpectedly, has a mask placed on his head, by someone standing behind him, and this being done, the boys in company with their father or respective male guardians, are marched back in Indian file to the *cravo*, wearing the masks, supposed to have been given to them by Kovave as a guarantee of his good fellowship. So far as the boys are concerned, thus ends their part in the feast of Kovave; all the food that has been taken to the bush is eaten by their male relatives, and the initiated members of their tribe. As *heava*, they have to settle down to seclusion within the *cravo*, until they are qualified to pass on to the next stage in their initiation.

The reasons assigned for this period of seclusion are, that when boys reach the age of puberty, they ought not to be exposed to the rays of the sun, lest they suffer thereby; they must not do heavy manual work, or their physical development will be stopped, all possibility of mixing with females must be avoided, lest they become immoral, or illegitimacy become common in the tribe. The provisions made to assist the boys to keep in seclusion are ample.

On becoming *heava*, they take up permanent residence in the *cravo* in which they are to pass through the respective stages of their initiation. This is a large building, provided with an entrance in front and an exit at the back. When the boys are in seclusion as *heava*, in the *cravo*, a platform is carried out some distance from the exit, and part of this platform is closely fenced in that the boys can come out and sit down in the open air and not be seen by passers-by. The unenclosed part of the platform is used by the mothers or female kin of the *heava*, as a convenient place on which to put the food, when they bring it to their sons or relatives in seclusion. That all possibility of the boy talking to the mother, or of seeing her when she comes with the food be avoided, she has to cough or make some distinctive noise, that the boy may know of her approach and retire to the interior of the *cravo* until she has placed the food on the platform and returned to the village, when the boy is free to go out and get the food through the fence.

Seclusion does not mean complete incarceration; for the boys are allowed to go out of doors occasionally and get fresh air; but on such occasions they are encased in plaited coconut palm leaves, which they carry from within, so that only their feet are exposed. During these walks in the open they are under a bond of silence; in the *cravo* they can talk as much as they like among themselves, but when out of doors

for exercise, they must not speak to one another, neither must they converse with anyone they may pass; they must avoid going near to their homes, and the possibility of being recognized by their female relatives.

If there are arbitrary rules to be observed in connection with the period of seclusion, the taboo on certain kinds of food is no less arbitrary to the initiates. There are many kinds of food that must not be eaten by the *heava*; chief among these are certain fish, as *tanara*, *toai*, *teave* and *miura*. The initiates are told that if they eat any food that is tabooed, they will speedily become bald and prematurely shrivelled in body; disease and death will come upon them, and their names will be held in disgrace among their relatives. Whilst observing the taboo of certain kinds of food, in the period of their seclusion, they are instructed by the old man who resides constantly with them as their instructor and adviser, in all matters pertaining to taboo recognized by their tribe. They learn the seasons that are closed against certain kinds of fish, and the times when certain kinds of food and fruit are to be reserved for coming feasts; so that when they leave the *eravo* they are quite qualified in such matters to look after their own property and to care for the best interests of their tribe.

The occupations of the *heava*, during their confinement in the *eravo*, are, of necessity, few, and take the form of pastimes rather than work of a serious and important nature. Plaiting armlets and girdles, preparing paper mulberry for *si's*, or genital coverings such as are worn by the men, making combs and headdresses for future use, are the principal forms of work indulged in to break up the monotony of their secluded life. It is during this period that they receive such information as is calculated to equip them for all the duties and obligations of citizens and worthy members of their tribe. From their guardian they receive all kinds of advice respecting their duty to their tribe; this must always take the first place in all their actions; the enemies of the tribe must be the enemy of the individual initiate; it will be to the best interests of the tribe that it should be so. In selecting a wife, the first thing to be considered is the interests of the tribe, whether she is likely to bear healthy children; on the other hand, if she proves to be barren, the obligation of the husband to his wife ceases, because she cannot bear him children, *i.e.*, because she is not contributing to the strength of the tribe. Whatever serves the highest interests of the tribe is justifiable; if a woman bears twins, it is right to bury one of the twins, because no mother is thought to be capable of nourishing at the same time two children as successfully as she can one. Two weak men are not the credit to the tribe that one strong man can be; hence, until quite recently, infanticide was taught and practised as being essential to the future interests of the tribe.

Their conception of right and wrong is governed by what public opinion requires in order that the tribe may maintain its position among other tribes.

It is an open question if illicit intercourse *per se* is punishable and to be avoided on the ground of being immoral; it is certainly detrimental to the welfare of the tribe, and that is sufficient reason for checking it as far as possible. No one will

be responsible for the future conduct of one illegitimately born, and for that reason it is not murder to kill an illegitimate child by strangulation.

There are many reasons given why a child must not be allowed to live if its birth cost its mother her life; the chief is, that every life given has to be avenged; an eye for an eye is an immutable law with the savages of Elema. The deceased mother is not supposed to have died of natural causes, or of senile decay; in some way the child took her life and that is said to be ample reason why the child should be buried alive in the grave of its dead mother. A more important consideration is the fact that the mother being dead, there is no one that can be relied on to nourish the child satisfactorily that it may become an useful unit of the tribe.

The Gulf Papuan believes implicitly in the survival of the fittest. Personal desires, likes and dislikes, everything that is, or can be, must be subordinated to the pursuit of obtaining the fittest. This idea is innate in him, it is fostered by his guardians when he is a child, it is inculcated in his initiation, it is dominant in him until he dies.

Sorcery is an important element in the life of the tribes of Elema, and the guardian, whose person is sacred during the period of initiation of the boys, proceeds much as follows, in giving them instruction in the art of sorcery; not with a view of making them sorcerers, but to impress on their minds how great is the power of sorcerers. He proceeds in this way. He squats on the floor of the *eravo*, and the boys squat around him. Having provided himself with a hollow bamboo containing herbs used by sorcerers, the chief of which are *upe*, the ginger root, and *aputa*, a herb brought down from the mountains. These he places before the boys, at the same time informing them that each herb inside the bamboo, if used in a certain way, has power to cause sickness, disease, storms and death. Having taken out all the herbs in the bamboo, he proceeds to name each one, and describes its respective power and how it is used; this being done, he returns the herbs to the bamboo, arranging at the same time that it be taken to the top of a coconut tree and lashed to the *fai*, that is, the young palm leaf not yet expanded. It remains there until the *fai* begins to burst its covering and unfold itself in frond-like form, when it is brought back to the *eravo*. The boys are assembled and the old man tells them he has reason to punish a certain individual of an adjoining village, but avoids naming as his victim any relative of the boys present. He then gives the boys a pot of water and instructions to boil the water and keep it boiling; having placed the sorcerer's bamboo, with the herbs in it, on the rack erected over the fireplace, he leaves the boys for a time. On his return to the *eravo* he pretends to be annoyed that the boys in his absence have not observed his instructions fully; after an expression of annoyance and a considerable display of concern, evidently with a view of impressing on the boys the importance of what he is about to do, he proceeds to take from the bamboo certain herbs, and places them in the boiling water. The herbs having remained in the boiling water for some time, during which period the old man indulges in unintelligible incantations, he takes

the pot of boiling herbs outside the *eravo*, and buries its contents. On his return to the boys, he tells them they must wait for results, but grumblingly adds, that if there are no results, it will be owing to their negligence in failing to keep the water boiling.

The succeeding stage to *heava* is known as *heapu*, and when the boys enter upon this period of their initiation a feast is given by their relatives, termed *helei* by the Toaripians, probably because it is generally celebrated at the season of the year known as *heleihelei*. On reaching the *heapu* stage of their initiation, the period of absolute seclusion terminates; this however by no means allows them freedom to mix with their relatives in the village, or to sleep at home. They are now free to don the regulation ornaments of the *heapu*, made by themselves during the period of seclusion; they are also at liberty to appear in public, but under strict surveillance. They can take an airing daily in the vicinity of the village, and when invitations come to them from friendly villages, to come and share in a feast, they can accept them and go; but on all occasions when they leave the *eravo* as *heapu*, an initiated member of the tribe accompanies them, to see that they do not commit a breach of initiation rules. On these occasions when they appear in public, if it be merely for outdoor exercise, or when going on a visit to a friendly village, they go out in numbers, are all adorned alike with headdresses, armshells, neck ornaments, and carry either clubs or bows and arrows. At this period the lads wear plain belts covered with oil and red clay, these they tie very tightly round their waists. The carved wooden belts, so characteristic of the Papuan Gulf, are not worn till the next stage has been attained. During the *heapu* period of initiation, the initiates occasionally meet the *semese* or fighting men of the tribe, from whom they receive every incentive to become warriors.

There are certain tests that each *heapu* has to pass, before he can be considered as eligible to become a *semese* or warrior. Of these the most important tests are, chewing *upe* (the root of the ginger plant), and drinking the urine of the *semese* chief. The significance of observing these tests has not yet been ascertained; that much importance is attached to the latter is evident at times when a complaint is brought against the influence of the foreigner as undermining all the old customs and nullifying them by new teaching. It is not uncommon to hear an old chief remark, "I drank my chief's urine, but no one has drunk mine."

Such initiates as undergo this test lie on their backs with open mouths, the chief whose right it is stands over them and micturates into the mouths waiting to receive his urine; an initiate who successfully passes this stage is recommended to the warriors as eligible and ready to enter upon his last stage of initiation. On becoming *semese* the initiate has to make the acquaintance of the mysteries of *tiparu*; this is deemed the greatest privilege, and for it another feast has to be given by the initiates who have become *semese*. The *tiparu* (Pl. XLI, 1), or bull-roarer, is common in the Papuan Gulf, but so far as can be ascertained, it is not supposed in itself to possess any supernatural power, and is only used as a visible expression of a malignant god or deity, said to reside on Yule Island.

It may have a greater influence on the social life of the tribe who keep it than is yet known by outsiders; it certainly has the power of terrorising the women and children, beyond that it is not yet evident what further significance it may have.

There is a legend of considerable length concerning the origin of *tiparu* and how it first came into the Papuan Gulf, but as it has no particular connection with initiation, it can be omitted from this paper.

What the initiates, who have reached the *semese* stage, learn at the feast given by their relatives to *tiparu*, is disappointing to them, as they have often admitted. On the occasion of this feast, they are taken away from the village to some lonely place in the bush, and on their arrival there the only thing to be seen is a display of clever manipulation of the bull-roarer, so as to produce almost every possible kind of whining. They are allowed to share in the feast, which is frequently interspersed with the whining of the bull-roarer; and they are taught how to produce these sounds from the bull-roarer; but, above all things, they are bound to absolute secrecy.

To divulge the mysteries of *tiparu* to any female of the tribe, *i.e.*, to let it be known among the women that the whining of the bull-roarers is not the cry of a god but the work of a man, is to bring upon the indiscreet the curse of *tiparu*, which is equivalent to death, and any woman found anywhere near the place where the feast of *tiparu* is being celebrated is taken and made the common property of all the men assembled there; to be released, later, with the warning that if she divulges what has taken place, to any female, she will be put to death.

Semese is the last obligatory stage of initiation; having become a *semese*, there is no further need for the initiate to reside in the *eravo*, he is now free to marry and make a home for himself.

There are many ceremonies attendant to initiation as observed by the tribes of Elema that are not mentioned in this paper, because it is desirable to acquire further knowledge of them; what is herein given must be accepted as preliminary, for it is evident that the sacred regard of these tribes for initiation indicates a consciousness of its importance to them, as yet not quite intelligible to the uninitiated who would peer into their realm of barbarous sophistry.

Explanation of Plate XLI.

Fig. 1.—This drawing is a fac-simile of the most valued bull-roarer, *tiparu*, of the Moreaipi tribe, who live at Orokolo in the Gulf of Papua. The figures are supposed to represent the original male and female ancestors of this tribe, who are named Iva and Ukaipu respectively. The Moreaipi claim a common ancestry for all the tribes of the Elema district from Iva and Ukaipu. Iva is said to have sprung from the ground like a plant. Ukaipu was found by Iva in the hollow trunk of a large tree.

Fig. 2.—Dance Belt, representing Iva and Ukaipu: Moreaipi tribe.

Figs. 3 & 4.—Rain Gods.

Figs. 5 & 6.—Orokolo Men.

NOTES ON THE RELIGIOUS IDEAS OF THE ELEMA TRIBE OF THE PAPUAN GULF.

BY REV. J. HOLMES.

[WITH PLATE XLL]

THE religious ideas of the Elema tribes of the Papuan Gulf resolve themselves into reverence for certain sacred objects, a belief in the existence of the spirits of their dead, and worship of the beings they regard as gods.

In how great a degree the animal cult of these tribes may be associated with their reverence for their ancestors it is difficult to determine at the present stage of our knowledge of their religious ideas, but it is worthy of notice that the name or word for "ancestors" is practically the same term by which all objects are designated that are held sacred.

The term used by the Toaripi tribe for any animal which they reverence is *ualare*; their ancestors are known as *ulare vilare*; the *u* of *ulare* is a contraction of *ua*, a woman or wife; *vi* is a contraction of the word *vita*, a man or husband. *Lare* in both cases means a name. Thus *ulare vilare* signifies "husband and wife."

A native's explanation why a certain mammal, bird or fish is regarded sacred by him as his particular *ualare* is, that this animal was regarded as sacred by his original ancestor. He assigns no reasons why it was selected by the ancestor to become such. I have not yet been able to ascertain if the spirit of the ancestor was supposed to have entered into the particular *ualare* of the family and thus rendered it sacred. For the present we have to be content with the statement that a certain animal was regarded as sacred by the original ancestor; he never injured or killed it, never ate it as food when killed by anyone else, and because it was held sacred by him, his posterity for all time must also regard it as sacred.

If a man accidentally kills a member of the family of his *ualare*, he sets aside a period for mourning, during which period he fasts from the principal kind of food, eating only enough to keep himself from absolute starvation; he also observes many of the customs of mourning as if he had lost a relative. If on the other hand he kills a member of his *ualare* family in a fit of anger or for any other reason that is not justifiable, as soon as he recognizes what he has done he gives himself over to violent grief, abstains from all kinds of food, isolates himself from his relatives, and ultimately dies of starvation.

The *ualare* with which we are acquainted being all edible, and recognized articles of food among the respective tribes, it is probable that it is permissible to one

man to kill and eat the *ualare* of his neighbour without giving offence. It appears that a son can kill the *ualare* of his father, share the same with members of the family, and join with them in eating it and not give offence to the father, because he has not by any personal act violated his obligations to the object he individually considers sacred as his *ualare*. The beak, feathers, tail or any part of a *ualare* object that lend themselves to decorative or ornamental purposes are sacred to the individual from whose *ualare* they are taken; by him these parts may be plaited and made into ornaments for personal adornment, but under no pretence can a man of one *ualare* use for adornment the parts of the *ualare* of his neighbour without giving grave offence. I am not at present aware whether this cult imposes any limitations on marriage, the distribution of property and the order of succession to tribal privileges.

It is not known that any tree, plant, or inanimate object is regarded as sacred or as the *ualare* of an individual of the Elema district. Such objects as are regarded as sacred and as the *ualare* of individuals, families and tribes are, in every case, edible, and as such, used as food, each representative of a *ualare* abstaining only from such animal as he considers sacred as his personal *ualare*. The man whose *ualare* is a pig never at any time eats pig-flesh; on festival occasions he eats dog-flesh: the man with a dog *ualare* is equally consistent; he abstains from eating dog-flesh, but he may eat pig-flesh whenever he can get it.

Abstinence from killing and eating the *ualare*, by the individual whose *ualare* it is, seems to be observed in a spirit of reverence for the ancestor who held a certain object as sacred, rather than from a sense of dread lest some dire calamity should befall the eater.

Our present knowledge of the form of reverence for animals found in the district of Elema is too inadequate to enable us to determine its full religious and social significance to the tribes among whom it is found.

The wild boar's tusk, the acquisition of which is greatly desired as a mark of bravery, is not so much coveted as a personal adornment, as for the courage, ferocity, and daring which it is supposed to contain and to be capable of imparting to anyone who secures it. The cleverly made effigies of *ualare* objects which are frequently suspended at the end of the roof ridge-poles in front of certain dwelling houses, are not hung there purely for decorative purposes, but have a meaning intelligible to the initiated, and are sacred to the individual who suspends them in front of his private house.

Tribal feasts are not merely occasions for eating, drinking and making merry. These feasts, as distinguished from family feasts, have associated with them one or more of the many gods of the tribe. An important item in the programme of such feasts is the procession, in the pageantry of which the skilfully made effigies of the various *ualare* are much in evidence. To these is attached such religious significance, that, when the feast is over, they are taken away and burnt almost immediately, lest they should fall into the hands of people who would not respect them.

If the natives of Elema are reticent in giving information concerning their *nalare*, they are certainly communicative enough when approached on the subject of their belief in the existence of spirits (*ove*). The spirit world is a reality to them; each tribe has its own locality for it—it may be away in the west, toward the region of the setting sun, or it may be far back in the mountains of the Gulf Hinterland—but however uncertain they may be as to the precise locality of the abode of the spirits of their deceased relatives, of this one thing they are confident, that the latter still exist and can visit the living who are still in the flesh.

The future abode of spirits (*ove*) is determined by the kind of death the individuals die. The natives of Elema classify the spirits and their future in the following way:—

- '(1) Those who die fighting as warriors.
- (2) Those who die a natural death, either from sickness or senile decay.
- (3) Those who have been murdered, or have met with a violent end.
- (4) Those who have been killed by crocodiles, or by snakes.

(1) The spirits of warriors who die fighting are said to be taken to the residence of the god of war, which is supposed to be somewhere in the sky. The god of war is Hiovaki, and he is said to be always present wherever legitimate fighting is going on, that he may assist those warriors who call on his name and receive the spirits of all who are slain in the fight. The spirits of dead warriors are allowed considerable liberty to roam about among their old surroundings, and are supposed to retain feelings of anger against old enemies, to whom they become a source of great annoyance, by making frequent visits at night and tickling their feet, so that they are unable to get any rest in sleep. To rid the village of these troublesome spirits, an occasion is set apart after every fight, when every nook and cranny of the village is switched with flaming fire-brands. When this custom is observed in a beach village, the procession wends its way toward the beach: in an inland village the procession moves toward the supposed locality of the spirits' abode. This procession is accompanied with the beating of drums, the blasts of the conch shell, and much noise and shouting, with a view of so frightening the spirits back to their particular spirit-land that they will never return to annoy the living again.

(2) The spirits of individuals who die a natural death, go away, after being assured that all the ceremonies of mourning have been duly observed, to the particular localities which are claimed by the various tribes to be the abode of such spirits.

(3, 4) The spirits of individuals who have met a violent death from the hands of a murderer, or from a crocodile, are supposed, on the other hand, to roam about constantly and are frequently seen near their former abode. (3) Those spirits

¹ [The apparent cross-divisions in this classification may probably be explained thus:—

(1) The spirits of those killed in battle form a class quite by themselves; (2) natural deaths form a second group; (3) all violent deaths, *not* met in battle, form a third group; (4) certain forms of violent death, by the attack of the animals specified, are apparently regarded as a distinct sub-species of (3).—*Ed.*]

which have been expelled from their human existence by the violence of murder, are said to be always a source of annoyance to the murderer. (4) Those which are fated to wander because they were killed by a crocodile, often reside in the crocodile that ate the former body. These spirits are sometimes seen by their relatives, as bright fire-light in the eyes of these particular crocodiles, but only by such relatives as have the special kind of eye to see apparitions. These spirits are said to be most malicious, and to attack whom they will. This they do in all manner of ways; sometimes they use sticks and flog people unmercifully; at other times they creep in when everyone is asleep, and sprinkle icy cold water on the sleepers' feet, arousing them in a fright and prevent them sleeping again that night. When a spirit becomes a nuisance, the people whom he troubles wait for his return, and then take a canoe and paddle away up the river or creek, the spirit following. They leave the canoe and get into the bush, where he gets bewildered, as his crocodile-affinity cannot find its way about the bush; the crocodile-spirit being now lost in the bush, the party who came out to lay it ultimately return to the village and are not troubled by it again.

Dreams are associated with spirits (*ove*) and are said to be the communications of spirits who have wandered from the body whilst it was asleep and have had conversation with other spirits. Great importance is attached to dreams, and sometimes trouble ensues in consequence: so great is the inclination to believe that dreams are purely the information obtained by wandering spirits from other spirits. When there is a probability of dreams being realised in facts, it is a common thing to speak of the dreams until they are known to everybody; if they should become true in detail, the dreamer is soon regarded as a man with whom it is advisable to be on good terms.

The natives of Elema make a distinction between spirits that are gods (*harisu*), and spirits that are only such (*ove*) and not gods. The former are spirits, either good or bad, possessed of certain attributes that do not belong to spirits who shared in a human existence. These *harisu*-spirits that are said to be gods, are classified in their turn, and to each is assigned its respective sphere of work, having complications both unintelligible and mystifying to more enlightened minds.

The great and good spirit generally accepted by all the tribes of Elema as god, is known as *Harisu* or *Harihu*, and is recognized by all as an invisible spirit, the only true and kind god. Of his attributes not much is said except that all good things have their origin in him; he is loving, pitiful and kind. He is said to have a messenger named *Harohoha*, whose special work it is to make known to certain individuals of each tribe the will of *Harisu*. The men who are supposed to receive these communications from *Harisu*, through *Harohoha*, are sorcerers, known as *Perevita*, *Meroevita* and *Kikavita*. These names may have some significance: *Pere* means "betel nut," *Vita* is the term used for "man" or "husband"; *Meroze* is the name for the rattan-like creeper of the forest, and *Kika* is the name of all trees and shrubs of the bamboo family.

The pageant of the warriors' feast is supposed to represent, in effigy, all the *ualare*, spirits (*ove*), and gods (*harisu*), of the tribes by whom the feast is made; but it does not seem that any attempt is ever made to make an effigy of the supreme *Harisu* or of his messenger *Harohoha*.

The divine injunctions of Sinai, adopted in the Christian religion concerning God, as to the reverence and regard due to Him and His name, are quite intelligible to the tribes of Elema; the name of *Harisu* is above all names, the one to be held in respect, as also must be the name of *Harohoha*. It is permitted to a favoured few to be named *Harohoha*, but such individuals must not under any circumstance be generally spoken of as *Harohoha*, neither must they be spoken of in names common to the tribe; a substitute is provided in the term *Farevita*, which means "a man of renown."

The god of evil, named *Karisu*, is represented at the warriors' feast by a man, having his legs encased in dressed paper-mulberry cloth, dyed very black with charcoal. His head and neck are hidden in a hideous, grimacing mask, and the remaining part of his body, from the armpits to the hips, is cunningly protected with a thick belt, so padded outside or made on the outside, that the toy arrows constantly discharged at it from toy bows, do not penetrate the belt to the body.

The principal part *Karisu* has, in the procession, is to harass everyone who comes within his reach; he carries a large bow and arrow, and pretends to pick a quarrel with anyone likewise inclined.

As *Harisu* is said to be the supreme god of all the minor gods who work for the welfare of mankind, so *Karisu* is supposed to be the supreme god of all the minor malignant deities. He directs them to cause sickness, disease and death, and all calamities are the result of his evil advice and counsel to his subordinates.

The god to whom creative and protective powers are assigned is named *Ualare*. He is said to have created the sun, moon and stars, the sea and dry land, and everything that lives in the sea or on the land, with the exception of certain kinds of animals and foods. *Kivovia* has a prominent place among the minor deities of the good and supreme god *Harisu*. He is said to have created the sago palm, the betel-nut palm and many other good things. He had a wife named *Moru*, and to them was born a son named *Lavaosiaka*. They are supposed to have lived in the district of *Namau*, of the *Purari* delta. It is claimed for *Lavaosiaka* that he was the creator of the dog. *Raupu* and his wife *Mori-oi* are said to have created the pig; they lived at the village of *Kaipi* in the *Elema* district, wrongly named *Karama* in the maps of New Guinea.

Malignant and evil-disposed gods, the subordinates of *Karisu*, are many, and, according to native ideas, those have frequently to be appeased by sorcerers. Of these, *Kovave* is much in evidence; he is the mountain god, and to him is supposed to belong absolute power to help or hinder all travellers into the interior. He can cause sickness and lameness to all travellers on land; if he fails to protect them from snakes they will be bitten and die. He can endanger their lives by causing the bush natives to be hostile to them, or he can induce the sorcerers of



2. DANCE BELT.



1. *Tipara*.



5. OROKOLO MEN.



6. OROKOLO MEN.



3, 4. RAIN GODS.

the bush tribes to use their spells against them as visitors, that they may not live to return to their relatives again; he can reduce them to a state of starvation and exhaustion; and every kind of calamity he can bring upon them if they do not keep on good terms with him. This they can do by making him ample presents of food on the annual occasion of his visit to their villages.

During the north-west monsoon many of the tribes of Elema send large canoes of sago to the various villages of the Motuan tribe, who live in a coast district about two hundred miles east of the district of Elema. Prior to setting out on this journey, Avaralaru, the god of the north-west wind, has to be conciliated. To this end the village sorcerer is engaged at a good fee to intercede with Avaralaru and the god of the sea, that they may give to the voyagers a safe journey and bring them back safely to their village and friends. Two old men, who are considered to be sacred during the voyage, are specially commissioned to accompany these expeditions, that they may use their influence in appealing to the gods of the winds and the sea to refrain from bringing any calamity upon the party.

Another malignant god is named Saukoro; he is said to reside in the hollow trunks of trees, and is cruel in the extreme to all persons he may succeed in waylaying. He kills and quarters them, as men kill and quarter pigs. His special mission has not yet been ascertained, but it is said that he is very cunning in alluring men into his power by making a certain kind of light which throws spell on all who see it. So fascinating is this light which he causes to appear in the branches of the tree in which he resides, that individuals are said to go toward it and are unable to return when they would gladly do so, to avoid all the cruelty of Saukoro.

Oalea, the god of *tiparu*, the bull-roarer, and Hiovaki the god of war, have a prominent place in the past history of the tribes of Elema, and in some respects influence their social life to-day. It would, however, lengthen this paper unduly to do either of these deities credit and represent them as they are supposed to be by the natives of Elema.

A comparative study of revered animals, spirits and gods, and of the religious ideas associated with them by the various tribes of Elema, can alone give us an approximately correct estimate of the importance attached to them and their direct influence on the social and moral life of these tribes.

That a form of animal cult is recognized by these tribes—not as elaborate as what is found in North America—is probably beyond dispute; that they believe in the existence of the spirits of their dead is evident by the provisions they make for the comfort of such spirits, supposed to visit them occasionally from the spirit world; that they recognize gods as rational, intelligent beings, possessed of supernatural power for good or evil, is indicated by their regard and reverence for such gods as are assumed to be kind and good, and their fear, awe, and anxiety to appease such gods as are supposed to be the authors of all forms of evil, calamity, sickness, disease and death.

THE CRANIOLOGY OF THE NATIVES OF ROTUMA.

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[WITH PLATES XLII, XLIII.]

I. *Introductory.*

A COLLECTION of human crania was made by J. S. Gardiner, M.A., Fellow of Gonville and Caius College, Cambridge, on the occasion of his visit to Rotuma in 1897. Of the history of that island, and of the appearance, customs, and traditions of its inhabitants, Mr. Gardiner has given a very complete account, which was published *in extenso* in this Journal (vol. xxvii, June-October, 1898).

The present account of the human crania consists of a general description of the specimens, followed by a discussion of the conclusions to be drawn from this study; finally, detailed descriptions of the individual specimens, together with some numerical data, are appended.

The crania are nine in number, and from their general appearance, they would appear to have lain partially covered by a very dry sandy soil; in consequence of which the gelatinous constituents of the bony tissue have been largely removed, leaving the specimens in a brittle and fragile state. Some of the specimens show signs of weathering. Six crania are fairly complete with mandibles; there are two incomplete crania from which the facial bones and mandibles are missing, and there is a single calvaria. All the skulls are adult; and, in all, the facial bones have suffered more damage than those of the cranial vault. With two exceptions the skulls are those of males; there is one skull (1817) which is probably, but not certainly, male, and there is one female skull (1811).

II. *General Results.*

Excluding the female skull (1811), the specimens fall into three groups, as follows:—

- (a) Typical Polynesian of the western variety. The qualifying adjective *western* is found to be necessary, inasmuch as the researches of De Quatrefages and Hamy show that the Western and Eastern Polynesians are to be contrasted in respect of cranial type. In the

following notes, the term Polynesian is to be taken as signifying Western Polynesian, and indeed the Western Polynesian is to be regarded as the Polynesian *par excellence* in respect of skull-form. The specimens of Polynesian aspect are the following:—Nos. 1809, 1813, 1814, 1815, 1816, 1817. It must be mentioned that the cephalic index ranges in this series from 71 to 86·5.

(β) Typical Melanesian; represented by a single specimen, viz., No. 1812. (See Fig. 1, on p. 437 below.)

(γ) A form intermediate between the two preceding types, partaking of characters distinctive of both Polynesian and Melanesian crania; a single specimen, No. 1810, figures in this group, to which the female skull, No. 1811, is more nearly allied than to either of the foregoing.

The indication of craniology is thus that the island is inhabited by people of the tall brown-skinned Polynesian type, and also by individuals of the shorter and much darker-skinned Melanesian type, as well as by individuals possessing physical characters (such as stature, skin-colour, hair-colour, form of the hair, and the like) intermediate between those of the two foregoing stocks.

Since Rotuma is so situated geographically as to render it accessible to either Polynesians or Melanesians, such a combination of cranial forms is what one would have expected *a priori* to find among its inhabitants. It is now appropriate to adduce some evidence from the proportions of the crania, in support of the foregoing statements as to the way in which they may be classified. For this purpose several tables have been drawn up, the first of which shows that from the consideration of several of the principal indices, the differences previously mentioned are fully corroborated. In Table A the most striking contrasts are seen

TABLE A.

	Index from the averages for 1809, etc.	1812.	1810.
Breadth index ...	80	71	74·6
Height index	77·5	73·2	—
Alveolar index	98·1	105	—
Orbital index	84·5	80·9	95·1
Nasal index	46·7(?)	55	46
Palato-maxillary index.	109·8	110·3	116·4
Naso-malar index	105·4	109	108·4
Cubical capacity	1,552	1,405	1,310
Group	α "Melanesian."	β "Melanesian."	γ "Intermediate"

TABLE B.

	Average for Rotuma skulls considered to resemble the Polynesian type.	Average for Polynesian crania examined by Flower and Topinard.	Rotuma skull considered to be of Melanesian type.	Averages for Melanesian crania from Flower and Topinard.
Breadth index	80	79·7	71	71·3
Height index	77·5	75·5	73·2	74·9
Alveolar index	98·1	98·6	105	103·4
Orbital index	84·5	91·6	80·9	80·6
Nasal index	46·7(?)	47·9	55	55·6
Palato-maxillary index.	109·8	?	110·3	?
Naso-malar index.	105·4	?	109	?
Cubic capacity	1,552	1525 (Deniker)	1,405	1,460 (Deniker)
Group	α		β	

between the indices of the chief averages as obtained from the skulls No. 1809, 1813, 1814, 1815, 1816, 1817, on the one hand, and the skull No. 1812 on the other. For this reason the former skulls have been associated in a single group (*a*), while the latter (No. 1812) is regarded as a representative of a second group (*β*). The specimen No. 1810 will be seen to occupy an intermediate position inclining in some respects to group (*a*) and in others to group (*β*).

In the next place it is necessary to show that of the two groups just described, the first (*a*) may definitely be recognized as approximating to the Polynesian, and the other (*β*) to the Melanesian type form. With this aim in view, Table B was drawn up, and is next to be considered. A glance at the figures will establish the correctness of the proposition that among the Rotuma crania a Polynesian group and a Melanesian specimen are present.

That Rotuma is liable to be visited by Polynesians and by Melanesians is not only a matter of surmise from the consideration of its geographical situation, but is also evidenced by the information collected by Mr. Gardiner (*loc. cit.*, reprint, pp. 4 *et seq.*), which shows that the inhabitants do actually vary in appearance to a considerable extent, the majority, however, resembling men of the Polynesian type, the Melanesian element being apparently subordinate in amount. Mr. Gardiner records that the Rotuman legends mention the advent of visitors from Tonga, Samoa, and Niuafoou, but naturally reliable historical evidence on the subject of the peopling of the island is scanty in the extreme. It is noteworthy that Mr. Gardiner mentions that while Polynesian or Micronesian strangers might be adopted through marriage into a Rotuman family, Fijians and Melanesians on the contrary were always treated as inferiors, and when dead their remains were buried on some islet on the reef, apart, that is, from the Rotuman burial-places. Linguistically the affinities of the Rotuma natives are with the Samoans, who may be taken as representing the Polynesian type, rather than with the Fijians, who represent a Melanesian stock.

From the foregoing considerations it will be seen that the evidence of craniology is in accord with that furnished by the external appearance, the traditions, customs, and language of the natives of Rotuma. There remain two points for discussion in connection with this part of the study of the natives of Rotuma. In the first place, the proximity of Rotuma to the Micronesian area suggests the possibility of the presence of what might be referred to as a Micronesian constituent in the population of the island. This is a subject hard to deal with craniologically, because there has not yet been established satisfactorily in the Micronesian area a cranial form sufficiently constant to justify its description as a type-form. Indeed, so far as the researches of one of us go, Micronesian skulls are more closely matched by a skull from Easter Island (separated by the whole breadth of the Pacific Ocean) than any others from the more immediate vicinity of that island-group. There is consequently but one observation to be recorded in this connection. One might expect, in the Micronesian area, the occurrence of skulls with Mongoloid features, inasmuch as the islands of Micronesia

have been subject to immigration, on a fairly considerable scale, from the Asiatic mainland. The fact, then, that the Rotuman skull, No. 1814, though of the Polynesian type, also presents the Mongolian characteristic of large and widely divergent malar bones, is worthy of mention in this connection.

The other point remaining for consideration is the inquiry whether one should look for other cranial morphological types beyond those already mentioned. In this connection, too, there is but one fact to record, viz., that the Rotuman specimen, No. 1815, is, superficially at least, very similar to a skull from Vancouver Island, now in the Cambridge Collection. No stress need be laid on this observation, however, beyond the remark that, after all, the form of the skull, even in the most isolated communities where the character has become almost stereotyped, is liable to occasional varieties departing far from the usual form, and that in a case where two skulls from widely separated localities are compared, it is of course possible that either specimen may constitute an abnormality. In conclusion then, no elements beyond the Polynesian and Melanesian can be distinctly demonstrated to exist in the population of Rotuma, when one is confined to the evidence afforded by this collection of skulls.

III. *Detailed descriptions of the crania.*

The individual specimens will now be described in the numerical order of the catalogue of the Cambridge Anatomical Museum.

1809. This specimen consists of the bones of the cranial vault with the two temporal bones; the facial skeleton, including the mandible, being absent. The sex was male.

The general form in *norma verticalis* is brachycephalic (breadth-index = 81). The maximum breadth occurs in the region of the parietal eminences. Synostosis has commenced in the sagittal suture, at each extremity of which it has advanced further than in the intermediate portion. The parietal foramina are inconspicuous.

In *norma lateralis*, massive supra-orbital ridges are very noticeable; hereby the length of the skull is considerably augmented. Examination of the curve of the cranial vault leads to the observation that flattening is marked from the junction of the middle and posterior thirds of the sagittal suture onwards, being continued beyond the lambda. The external occipital protuberance is moderately prominent. The mastoid processes are massive and much prolonged downwards. At each asterion there have been wormian ossicles. On the posterior part of the frontal and on the parietal bones, the temporal ridges are reduplicated. At the pterion, the parietal and great wing of the sphenoid articulate with one another.

In *norma facialis*, the massive brow-ridges again attract attention. In comparison with the inter-parietal breadth (which is the maximum width of the skull) the frontal width seems unusually small. The maximum breadth occurs at a level far above the bases of the mastoid processes. The vertical height of the

skull is great, though actually it is exceeded by the figure representing the maximum transverse diameter.

In *norma basilaris*, the following points are to be noticed:—The glenoid fossae are of moderate depth only; the occipital condyles are somewhat asymmetrical in position as regards the margin of the foramen magnum; the endocranium presents no features of special interest.

In *norma occipitalis*, the form of the skull is pentagonal, and, as has been noted, the maximum breadth is found at the parietal eminences, from which level the lateral parietes converge so that the inter-mastoid diameter is relatively small. Distinct asymmetry in the positions of the occipital condyles is again noticeable; that of the left side descending to a lower level than its fellow of the right side, so that a slight degree of plagiocephaly is produced.

1810. A male skull, the base of which has been to some extent destroyed; the basilar portion of the occipital bone is imperfect; the nasal bones and ethmoid are also incomplete, so that the internal orbital walls are imperfect.

In *norma verticalis* the general form of the skull is oval. The cephalic index places it in the dolichocephalic class (index 74.6); it is also phænozygous; synostosis is seen in the sagittal suture, and the skull presents a ridge-like elevation along the line of this suture; there are two small parietal foramina.

In *norma lateralis*, the brow-ridges are massive and prominent, the face prognathous, the temporal ridges well marked, and the mastoid processes large. A ridge marks the line of the articulation of the sphenoid and temporal bones, and the coronal suture is synostosed near the pterion, where the sphenoid and parietal bones meet.

In *norma facialis*, the brow-ridges and zygomatic arches are again noticed as being massive. A depression, seen above the left external angular process on the frontal bone, indicates probably that injury had been sustained here through a blow.

The frontal bone shows post-orbital compression and is, generally speaking, developed to an extent small in comparison with that of the other cranial components. The orbits are shallow with very oblique roofs, and the lacrymal fossae are particularly shallow. The nasal aperture is long and narrow, and the remnants of the nasal bones suggest that these were also long, narrow, and not very prominent. Sub-nasal fossae are distinct (amblycraspedote).

In *norma basilaris*, the teeth are seen to be large and not much worn. The palate has a parabolic outline. There are large infra-temporal crests, long styloid processes, deep glenoid fossae, and prominent mastoid processes.

In *norma occipitalis*, the skull appears scaphoid. The external occipital protuberance is inconspicuous, but there is a well developed transverse occipital torus. At the right asterion is a small wormian bone.

Large Pacchionian depressions mark the endocranium. The angle of the mandible is small, being nearly 90°.

1811. A female skull with the mandible in fairly good preservation; the ethmoid bone and septum nasi are, however, much damaged.

In *norma verticalis*, the skull is of moderate length (it is mesaticephalic); the parietal eminences are well developed; there are two parietal foramina; the principal sutures are unclosed.

In *norma lateralis*, prognathism is very marked, especially the sub-nasal variety of the character; the frontal region is not full, the muscular crests, brow-ridges, and mastoid processes are feebly developed. The sphenoid and parietal bones articulate on either side; there are wormian bones in the lambdoid suture. The curve of the cranial vault runs fairly uninterruptedly from nasion to opisthion; slight flattening occurs at the bregma, and again between the obelion and the lambda, the latter flattening contributing to the formation of a slight but distinct occipital *renflement*; the inion is not prominent, nor are the occipital crests large.

A small fissure indicative of a suture dividing the malar bone horizontally is observed to start from the temporo-malar junction on either side. On the left side a variety of the pterygo-spinous foramen is seen.

In *norma facialis*, the orbits are rather low, with deep lachrymal depressions; the apertura pyriformis nasi is wide, with large, deep pre-nasal fossæ, of the type so frequent in Polynesian crania (cf. Macalister, *Journal of Anatomy and Physiology*, Jan., 1898). The nasal bones are wide and flat.

In *norma basilaris*, the palate is seen to have a parabolic contour; the condyles are placed slightly asymmetrically on the margin of the foramen magnum.

In *norma occipitalis*, the outline is pentagonal with very distinct flattened areas above and below the parietal eminences. A wormian bone is seen at the lambda. The angle of the mandible is nearly 90° ; the coronoid processes large and higher than the condyles; the sigmoid notch is shallow.

Female characteristics are well marked in this specimen.

1812. A male skull with the mandible; the zygomatic arches and the condyles of the mandible are broken; the bones of the cranial vault show evidence of weathering. Before proceeding to the detailed description, it may be remarked at once that this skull is in many respects typically Melanesian; at the same time, it closely resembles a skull in the Cambridge Collection labelled "Skull of a Bushman chief" (to which a similar description applies, and which is therefore not a typical Bush skull).

In *norma verticalis*, great elongation is noticed (the cephalic index is 71). The skull is phanozygous; there



FIG. 1.—SKULL NO. 1812. MELANESIAN TYPE.

is marked post-orbital frontal compression; the sutures are complex, and in the left half of the coronal suture is a long narrow wormian bone.

In *norma lateralis*, the glabella and brow-ridges are prominent; a moderate degree of prognathism is observed. The external occipital protuberance is large, but the mastoid processes of moderate size only. The sphenoid and parietal bones articulate on either side, and at each asterion is a wormian bone. The sphenopalatine foramen is very large on each side and is visible from the sphenomaxillary fossa.

In *norma facialis*, shallow wide orbits with bevelled outer margins are seen; the lachrymal fossae are deep. On each side the maxilla and sphenoid cut off the malar from the sphenomaxillary fissure. The nasal bones are short and upturned, wider below than above; the *apertura pyriformis nasi* is wide, with indistinct lower margin.

In *norma basilaris*, the palate appears parabolic in outline; the glenoid fossae are of moderate depth. On the right side the foramina spinosum and ovale are confluent with each other and with the petro-sphenoidal fissure.

In *norma occipitalis*, the outline is pentagonal; small parietal foramina are seen.

The mandible is massive, the angle large, and there is a depression in front of the gonion. The molar teeth decrease in size from before backwards.

1813. A male skull of very great size. The specimen is in good preservation; the mandible accompanies it; parts of the inner walls of the orbits have been destroyed.

In *norma verticalis*, the outline is elongated; on either side of the sagittal suture is an area of flattening which gives rise to a slightly keeled appearance. No parietal foramina are present. The temporal ridges are rather tortuous.

In *norma lateralis*, prognathism is distinct; the supra-orbital ridges and the external occipital protuberance are large and massive. The frontal bone recedes rapidly from the glabella, and the median sagittal arc of the cranium is regular except near the lambda, where the conformation is slightly bathrocephalic, the appearance being the more pronounced in consequence of the massive transverse torus crossing the occipital bone. The coronal suture is synostosed on the right side just above the pterion; on both sides the sphenoid and parietal bones articulate in this region. The temporal ridges are well marked; at the right asterion is a wormian bone.

In *norma facialis*, the orbital apertures are seen to be high and their margins bevelled; the *apertura pyriformis nasi* is of moderate width, the lower margins being indistinct; the nasal bones are large.

In *norma basilaris*, a hypsiloid palate is seen; the teeth are slightly worn down, the molars decreasing in size from before backwards; the first molars of the upper jaw have four cusps, of the lower have five cusps, the second molars resemble the first as regards the number of cusps, the third molars of the upper jaw have three cusps, and their *vis-à-vis* in the mandible five cusps. The teeth on

the left side of the mandible are irregularly placed. The very great capacity of this cranium is to be specially noted. It is allied to the Polynesian type, but also resembles certain crania from North America in the Cambridge Museum.

1814 (Fig. 2). A large and almost perfect male skull with mandible; there are several perforations, probably due to injury incurred in exhumation. The great prominence of all crests and ridges giving attachment to muscles indicates the great physical development of the individual.

In *norma verticalis*, the skull is of moderate length; the sagittal suture is closed at the obelion, and no parietal foramina are present.

In *norma lateralis*, the skull appears moderately prognathous, the prominence and massive character of the brow-ridges, external occipital protuberance, mastoid processes, and zygomatic arches are marked. The frontal bone retreats somewhat rapidly from the glabella backwards, there is no flattening at the bregma, and the median sagittal arc is regular as far as the lambda, where a slight tendency to bathrocephaly is noticed. The sphenoid and parietal bones articulate at each pterion near which the coronal suture is closed. At each asterion is a wormian bone. As regards the facial bones, the profile is flattened.

A peculiar condition exists at the upper portion of each mastoid process (Fig. 3). The temporal ridge traverses the parietal bone and descends to the lambdoid suture, where the parietal bone is thickened and overlaps the occipital, passing backwards over it like a sort of operculum. But the



FIG. 2.—SKULL NO. 1814, NORMA LATERALIS.



FIG. 3.—SKULL NO. 1814, SHOWING CURIOUS RIDGES NEAR ASTERION.

temporal crest now running forwards is not confluent with the posterior zygomatic root on the temporal bone, for it is separated from that ridge by a deep fissure



FIG. 4.—SKULL 1814, SHOWING THE HORIZONTAL ZYGOMATIC LINE OF THE SKULL.

running obliquely upwards, to end in the squamo-parietal suture; this fissure is in turn overlapped by a thickening of its anterior lip, which is continuous with the posterior root of the zygoma. In the absence of evidence to the contrary, it is suggested that the fissure which separates temporal ridge and posterior root of the zygoma represents the original line of demarcation between the squamous and mastoid (*i.e.*, petromastoid) elements of the temporal bone. Traces of a single arrangement appear in No. 1813.

In *norma facialis*, a depression, probably the relic of a wound, is seen over the left orbit; the orbits are shallow, with high orifices, and bevelled orbital margins; the nasal bones are small and narrow. The apertura pyriformis is wide and has well-marked sub-nasal fossæ. On the left side is a small bony tubercle on the lower margin of the nasal aperture. There is slight post-orbital compression of the frontal bone. The canine fossæ are practically non-existent, and this combines with the much splayed and massive malar bones to confer on the countenance a decidedly Mongolian cast.

In *norma basilaris*, an hypsiloid palate is seen; the glenoid fossæ are deep, the zygomatic arches outstanding. On the left side is a double pterygo-spinous foramen. The great development of the ridges on the occipital bone reminds one of the corresponding region in the gorilla, especially of immature specimens.

In *norma occipitalis*, the chief features are the extraordinarily prominent occipital ridges and crests.

The mandible is massive, the coronoid processes being higher than the condyles; a deep notch is seen in front of the gonion. The symphysis is prominent. Some crenation is seen on the surface of the crowns of the molar teeth.

1815. A male skull with mandible; much of the facial skeleton is absent; muscular ridges and processes are moderately well marked. There is a slight degree of prognathism.

In *norma verticalis* the form is that of an oval posteriorly truncated; the skull is of moderate length and cryptozygous; synostosis is seen in the sagittal suture from the obelion to the lambda; there are very small parietal foramina; on either side of the sagittal suture is an area of flattening.

In *norma lateralis*, the chief feature is the prominence and high development of brow-ridges, external occipital protuberance, mastoid processes, temporal ridges,

and other bony crests. On each side the sphenoid and parietal bones meet at the pterion, near which the coronal suture is closed. The frontal bone retreats rapidly from the ophryon, but the median sagittal are is regular till interrupted by a slight bulging of the occipital bone beyond the external occipital protuberance. At the left asterion is a wormian bone, and there is a slight exostosis behind and below the left parietal eminence. The occipital condyles are very prominent; and on the left side the middle meningeal artery threw out an external branch.

In *norma facialis*, the orbits are seen to be shallow and wide; the lachrymal fossæ are deep; orbital margins are sharp; the remains of the nasal bones are sharply upturned.

In *norma basilaris*, the only point to notice is the depth of the glenoid fossæ.

In *norma occipitalis*, the outline is pentagonal, and synostosis of the lambdoid suture is noticed near the lambda.

In the mandible the angle is large, the coronoid processes are higher than the condyles; the chin is prominent; anteriorly to the gonion is a well marked notch.

The teeth show slight crenation; the third molars are the smallest, and these and the first molars are pentacuspitate, the second molars are tetracuspitate.

1816. A calvaria of the male sex. In *norma verticalis*, the contour is obovate and brachycephalic, with slight post-orbital frontal compression; the right half of the coronal suture is closed, the left half being closed near the pterion; the sagittal suture is tortuous and synostosed at the obelion. As regards the endocranium, synostosis is almost complete, showing that this process commences and is completed earlier on this surface than on the exterior of the skull. There is one parietal foramen (the left). The calvaria is much broader below the parietal eminences, but this appearance may be due to posthumous deformation or pressure.

In *norma lateralis*, the brow-ridges are moderately prominent; the external occipital protuberance of similar development; the median sagittal are is regular. The same description applies to the transverse are as seen in *norma occipitalis*.

1817. A much damaged skull of which it is hard to determine the sex, which is probably male. The facial skeleton is absent, as is also the mandible and much of the base on the right side. The cranium is large, with but moderately marked prominences and muscular ridges.

In *norma verticalis*, the outline is ovoid, with outstanding parietal eminences; brow-ridges are not prominent. There are no parietal foramina; the sutures are not tortuous. It is particularly noteworthy that there is considerable asymmetry (plagiocephaly), flattening on the right side being accompanied by corresponding bulging outwards on the left.

In *norma lateralis*, no marked prominence of brow-ridges or other muscular ridges or processes is to be observed. At each pterion the sphenoid and parietal bones seem to have come into contact, but there is now synostosis of the coronal suture in this region. The frontal bone rises fairly steeply from the ophryon, and

TABLE C.—ROTUMA SKULLS.

Anatomical character.	1809.	1810.	1811.	1812.	1813.	1814.	1815.	1816.	1817.
1. Character of lower nasal margins	?	Spine distinct; margins indistinct, with small fossae. Closed.	Deep fossae; bothrocrapedote variety. Present R. and L.	Margins indistinct, no fossae. Closed.	Margins indistinct, no fossae. Closed.	Fossae are distinct, but spine broken. Present.	?	?	?
2. Infra-orbital suture, pars facialis	Closed.								
3. Post-palatine spine	Absent.	Absent.	Blunt; trace of a notch.	Sharp.	Sharp.	Blunt.	?	?	?
4. Divided malar bone	Not seen.	Not seen.	Trace of suture R. and L.	?	Not seen.	Not seen.	Not seen.	?	?
5. Lachrymo-ethmoidal suture	?	?	?	Present R. and L. and long.	?	Present R. and L. and long.	?	?	?
6. Conformation in region of pterion { R. L.	Parietal; Sphenoid.	Parietal; Sphenoid. Parietal sphenoid.	Parietal; Sphenoid. Parietal sphenoid. None.	Parietal; Sphenoid. Parietal sphenoid. None.	Parietal; Sphenoid. Parietal sphenoid. None.	Parietal; Sphenoid. ?	Parietal; Sphenoid. Parietal sphenoid.	?	Parietal; Sphenoid. Parietal sphenoid.
7. Palatine torus	?	?	None.	None.	None.	Ridge, no torus.	?	?	?
8. Pterygo-spinous foramen	?	Absent R. and L.	Present on L.	Absent R. and L.	Absent R. and L.	Absent R. and L.	Absent R. and L.	?	Absent L. ? R.
9. Margin of foramen magnum	Tubercle on anterior margin.	?	?	Normal.	Normal, but large foramen.	Normal.	Normal.	?	Normal.

From the foregoing table it appears that—

- (1) The lower nasal margins are commonly indistinct, though never entirely obliterated, and that fossae of the type so common in Polynesian crania are here met with.
- (2) That the pars facialis of the infra-orbital suture is rare.
- (3) That the post-palatine spine is commonly sharp, not bifid.
- (4) That division of the malar bone (os japonicum) is rare.
- (5) That the lachrymo-ethmoidal suture is normal and that it is long.
- (6) That the parietal and sphenoid bones commonly meet at the pterion.
- (7) That a palatine torus is rare.
- (8) That the pterygo-spinous foramen is rare.
- (9) That tubercles on the anterior margin of the foramen magnum are rare.

TABLE D.—SKULLS FROM ROTUMA.

Measurements.	1809.	1810.	1811.	1812.	1813.	1814.	1815.	1816.	1817.
Maximum length ...	189	185	172	183	203	187	193	178	176
Ophryo-iniac length ...	175	175	169	178	191	185	186	176	173
Maximum breadth ...	149	137	131	130	150	148	148	164	149
Bi-auricular breadth ...	114	120	107	115	118	132	123	?	124
Bi-stephanic breadth ...	114	94	104	106	115	122	123	114	?
Bi-zygomatic breadth ...	?	136	121	128	140	148	?	?	?
Basion-nasion ...	197	?	97	96	111	110	111	?	97
Basion-prosthion ...	?	?	97	101	105	115	?	?	?
Basion-bregma ...	142	?	132	134	147	147	149	?	140
Basion-lambda ...	120	?	115	117	133	123	130	?	118
Basion-inion ...	87	?	81	84	94	90	90	?	79
Basion-opisthion ...	34	?	34	34	42	37	40	?	35
Orbit : height ...	?	39	33	34	41	38	38	?	?
" breadth ...	?	41	41	42	47	46	44	?	?
Ap. py. nasi : height ...	?	63	48	51	58	62	?	?	?
" " breadth ...	?	29	30	28	27	29	?	?	?
Pal. max. : length ...	?	55	52	58	61	59	?	?	?
" " breadth ...	?	64	62	64	60	67	?	?	?
Jugo-nasal arc ...	?	105	102	110	124	120	?	?	?
Jugo-nasal width ...	?	97	94	101	112	110	?	?	?
Dental series ...	?	143	138	143	50	?	?	?	?
Horizontal circumference	518	509	483	507	555	534	540	523	522
Nasi-alveolar height ...	?	82	65	69	74	80	?	?	?
Bi-gonial breadth ...	?	103	99	103	102	116	102	?	?
<i>Indices.</i>									
Cephalic ...	80.9	74.6	76.1	71	73.9	79.1	76.7	86.5	84.6
Height ...	77.8	?	76.7	73.2	72.4	78.6	77.2	?	79.5
Alveolar ...	?	?	100	105	?	104.5(?)	?	?	?
Orbital ...	?	95.1	80.5	80.9	87.2(?)	82.6	77.3	?	?
Nasal ...	?	46	62.5	55	46.5(?)	46.8(?)	?	?	?
Palato-maxillary ...	?	116.4	119.2	110.3	96.3(?)	113.9(?)	?	?	?
Naso-malar ...	?	108.2	108.5	109	101.8	110	?	?	?
Cubic capacity ...	<i>Circa</i> 1,550	1,450	1,315	1,405	1,720	1,600	1,695	<i>Circa</i> 1,550	1,530

the median sagittal arc is regular, with slight elevation at the bregma and slight sub-iniac bulging of the occipital bone; at each asterion is a wormian bone.

In *norma basilaris*, the only point to notice is the shallowness of the glenoid fossa.

In *norma occipitalis*, the form is pentagonal in outline; the maximum breadth is found in the mastoid region; in addition to wormian bones at each asterion, there are two others of larger size in the lambdoid suture. The inion is not prominent; there is a small exostosis on the right parietal eminence.

List of Tables.

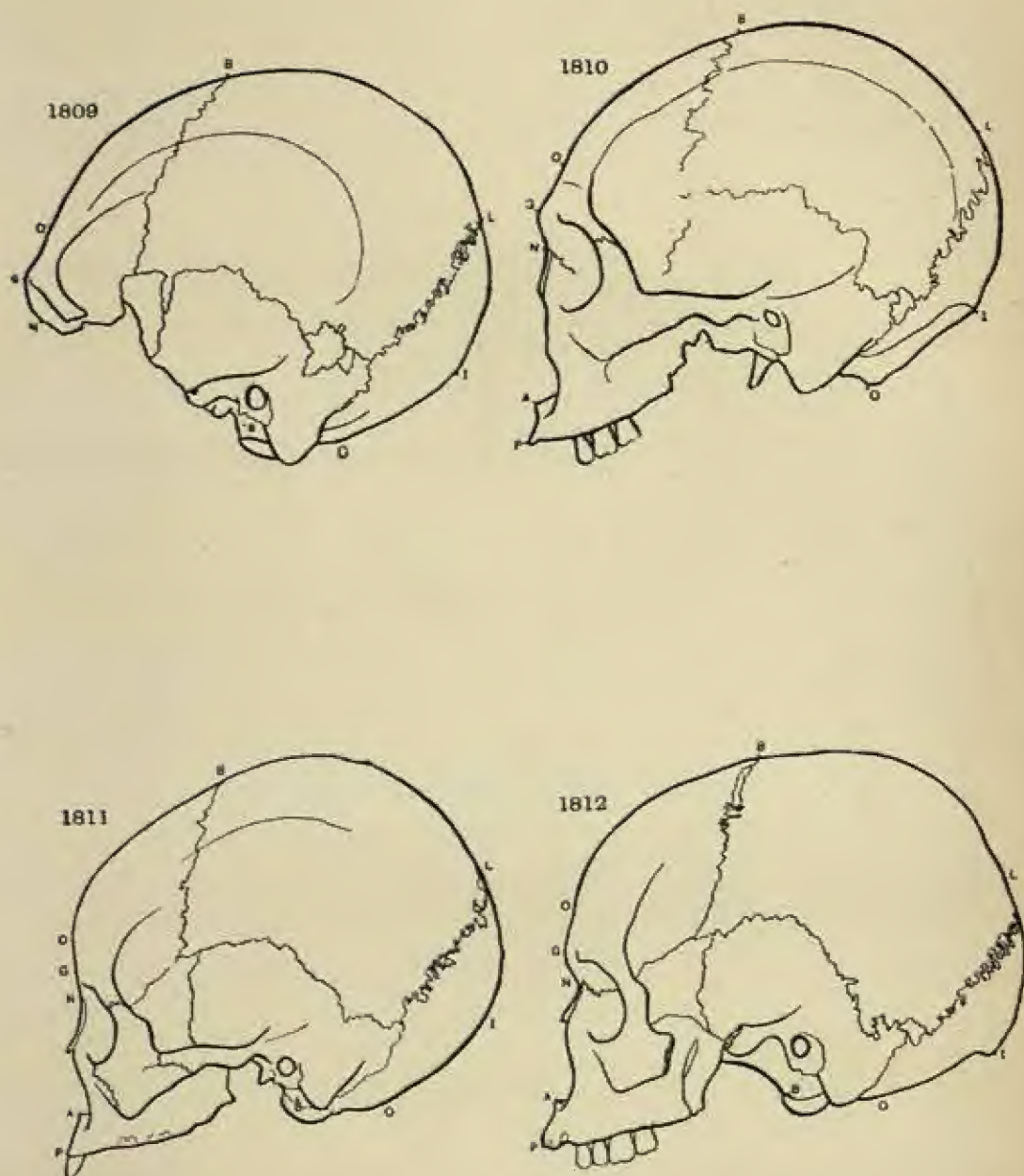
- A. The three groups.
- B. Groups α and β with Melanesian and Polynesian types.
- C. Certain cranial characteristics.
- D. Measurements and indices.

Plates XLII, XLIII.

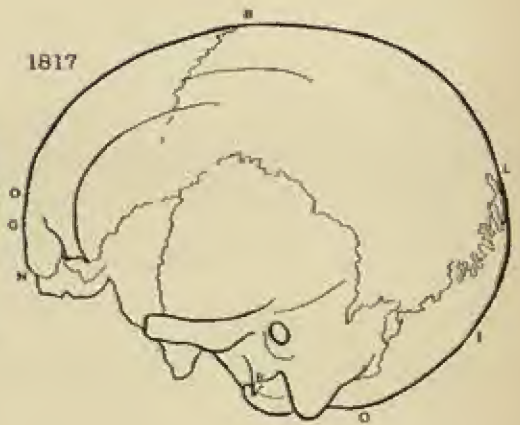
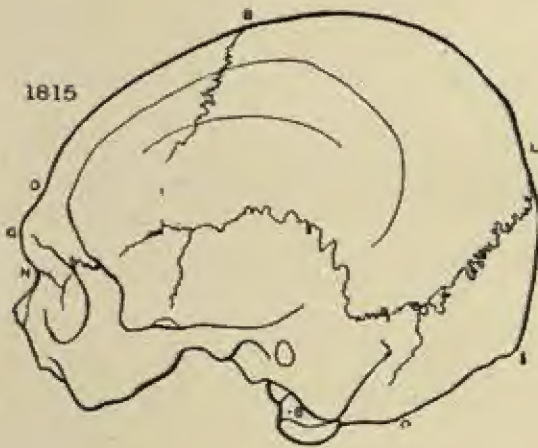
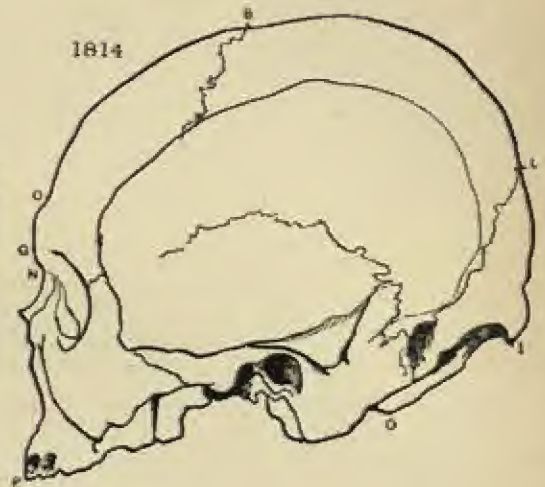
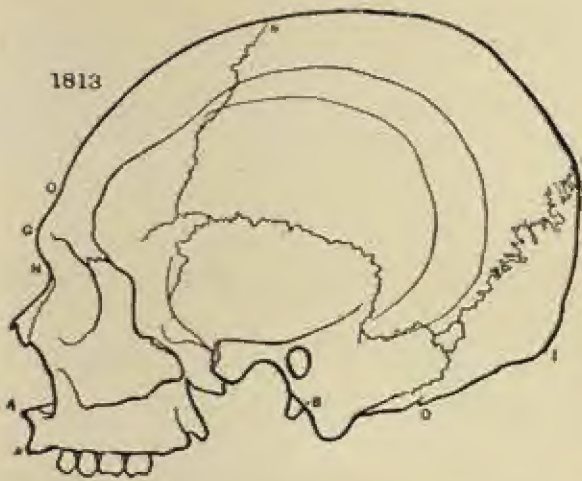
Outline drawings of all skulls in *norma lateralis*.

Figures in the Text.

- (1) Skull 1812. Melanesian type (p. 437).
- (2) Skull 1814. *Norma lateralis* (p. 439).
- (3) Skull 1814. Showing curious ridges near asterion (p. 439).
- (4) Skull 1814. Showing horizontal line of the skull (p. 440).



THE CRANIOLOGY OF THE NATIVES OF ROTUMA.



THE ETHNOGRAPHY OF THE NAGAS OF EASTERN ASSAM.

BY W. H. FURNESS, M.A., M.D., PHILADELPHIA.

[PRESENTED OCTOBER 28TH, 1902. WITH PLATES XLIV-XLVI.]

WERE not the gigantic Himalayas so near and ever-present, the Naga Hills of Eastern Assam, even though not snow-clad, would be worthy of the dignity of being termed mountains. This chain of so-called hills stretches from the south-eastern borders of Tibet, between Lat. 20° and 26° , almost due south to the sea, forming a dividing wall between Assam and Burma. The peaks range in height from 4,000 to 10,000 or 12,000 feet, and in general are wooded to their very summits.

The dwellers on this chain of semi-tropical jungle-clad mountains are, without distinction, all known to the inhabitants of the plains of Assam as Nagas, but to the mountaineers themselves this is but a courtesy title to be used only when speaking of themselves, adding "Naga" to their own peculiar tribal name.

The origin of thus collectively naming these wild tribes Nagas can only be conjectured; possibly they were confused with the mythical demi-gods called Nagas, with whom the gods of the early Aryans had to contend, or possibly they were called Nagas owing to the serpent worship introduced after the Mongol invasion of the north-east of India. There seems to be no trace, however, of this serpent worship now remaining among these tribes. Or, it has been suggested that Naga is a corruption of the word *nangu*, meaning naked. The Nagas of the hills, reaching from the Tibetan border in the north as far as the district of Manipur in the south, may be, roughly speaking, included in the same general class as are their languages, viz., as Tibeto-Burman. In the facial contour, however, they have little more than a trace of their Mongolian or Tibetan ancestry; the drawing down of the inner angle of the eye, so emphatically marked in all Mongolian races, is but slightly noticeable among the Nagas, and the high cheek-bones seem to have been softened down by amalgamation with the flat-faced Burman. They are short in stature, yet lightly built, unlike the mountain people of the Himalayas. In fact, the Nagas resemble more closely the natives of the Malayan Archipelago than any of the other races inhabiting the hills or plains of India and Assam. Although their languages have been classed, in the Census Report of Assam for 1891, as belonging to the Tibeto-Burman family, so little is known about these numerous dialects, beyond certain vocabularies of the more important tribes, this classification is, at best, tentative.

An exhaustive grammatical study of the Naga language would be an almost hopeless task; possibly there is no portion of the world of an equal area where so many dialects are spoken. Not only has each tribe a distinct form of speech, always liable to rapid changes, but also, in several instances, the clans, notably the Mongsem and Chungli clans of the Ao tribe, living in the same villages and working in the same field, speak almost totally different dialects; each understanding the other, to be sure, but the member of one clan speaking his own clan language, until, in the case of marriage, the woman adopts the speech of her husband's household. The similarity of certain words and of grammatical construction, in the dialects of the Naga Hills, is admirably shown by Mr. A. W. Davis in the Census Report of Assam for 1891, in the chapter on languages, pp. 163-183.

The Nagas are farmers rather than hunters, and now that the Indian Government has assumed control over the larger part of the hills south of the Dikku river, and has thrown a depressing damper on the distracting and highly diverting pastime of human head-hunting in raids on the hills and even in the tea-gardens of the plains, the Nagas are able to farm their hillside fields in comparative peace, and have become almost self-supporting in the way of food supply; but nevertheless it costs the Government many thousands of rupees every year to maintain this blissful state.

In travelling from Tamu, at that time the border village of British control in the north, to Manipur in the south, and thence in a south-easterly direction to Mandalay in Burmah, I had the opportunity of observing the following tribes of Nagas in the order named:—The Miris, the Aos, the Semas, the Lhotas, the Rengmas, the Angamis, the Kajahmas and Merhamas (the two latter closely akin to Angamis), the Tunkhuis, the Manpuris, and beyond Manipur towards Burma the Aimons.

The different tribes seem to have settled in certain definite localities and there established their villages on the very crests of the hills, whence an extended view of the country round about may be obtained, and where sudden attacks are almost impossible owing to the acclivity of the approaches. The villages are furthermore protected by having the paths leading to them sunken, so that the attacking party when trapped in one of these ditches is at the mercy of the villagers above. The segregation of the tribes and the hilltop villages is undoubtedly for protection to the whole tribe and to the villages themselves, but there does not appear to be a marked tribal unity; there is no one man whom any single tribe regards as a chief or leader. They have their definite customs, their tribal peculiarities, and their language by which they recognize each other, and although the villages seem to be the units of the tribal life, there are yet smaller divisions within the villages themselves which, to borrow a term from chemistry, appear to be the molecules of which the tribe is composed; these are the *khels* or wards into which the village is divided. Some villages are made up of but two *khels*, others have four or five, some as many as

eight, and each *khel* has its head-man or chief, and apparently is united in a zealous obedience and loyalty to its leader. To any one but a dweller in the village the boundaries of these *khels* are unknown; there is no wall or fence between them and no stone or stake to mark where one *khel* begins and another ends. There is of course free communication between the different *khels* in a village; the members intermarry, they assist one another in the cultivation of the fields, they help to build houses for each other, and together they clear pathways through the jungle to the rice fields and between villages; yet there are often bitter inter-*khel* feuds and consequent bloody contests between the inhabitants of the same village, one *khel* against the other, albeit bound together by ties of marriage and kinship. To show to what extent this independence of the different *khels* exists an incident is given in the Assam Census Report for 1891, where a Naga gave a jocular description of an attack on his village, in the course of which one man, five women and twenty children were slaughtered in one of the *khels*, while those of an adjoining *khel* stood by and never lent a hand to their neighbours. The narrator declared that he never saw such rare sport as the killing of the children; it was, he added, just like killing chickens.

Over each *khel*, as I have mentioned, presides a head-man who, as far as I could ascertain, is self-appointed; that is, when a man has a sufficient following of friends or relatives who are willing to split off from their native village and either move to an unoccupied hilltop or establish themselves in another village or in a different location in their own village as a separate *khel*, they follow their leader and as a co-operative body build houses and clear new fields. Why certain men should have a following and exactly in what manner the followers remunerate their head-man I was unable to learn. The head-man of the *khel* lives always in the best built and largest house, and in front of his door there are usually to be seen several large forked stakes, symbolizing the heads of sacrificed wild bulls, or near by are several large boulders which have been dragged up from the valley and placed in the village as mementoes of lavish feasts given to the *khels* by this or that head-man. Such feasts involve no little cost in rupees, large distribution of stores of rice, and the slaughter of many pigs and fowls, but how this wealth is accumulated, whether by the industry of the head-man's family, or whether it is hoarded tribute, I could not find out. The head-man acts as arbiter in points of dispute over land or other property and imposes fines for violation of custom.

I have likened the village *khels* to the molecules of a tribe; let me borrow still further from the molecular theory and designate as atoms, of which the tribal molecules are composed, the *jhats* or clans which enter into the constitution of a *khel*. The *jhats*¹ are apparently family groups claiming descent from different ancestors or founders; possibly—I only tremblingly suggest—they may

¹ The words *khel* and *jhat* are used by the Assamese to indicate the divisions of a town, and family groups; I have borrowed them merely for the sake of uniformity, each tribe of Nagas uses a different word.

be relics of a forgotten totemism; at any rate, in their laws of exogamy they bear a resemblance to totemistic clans, but I was not sufficiently familiar with their languages to trace in the *jhat* names any sacredness of plant or animal, nor were the *jhats* differentiated by the worship of any animal, plant, or stone. I merely offer this as a suggestion for further research. Each *khel* in a village may be made up of one or several *jhats* living amicably together and intermarrying one with the other but never marrying within the *jhat*. I had been led to understand in conversation with Mr. A. W. Davis, then Commissioner of Police for the Naga Hills, and also by an article published some time ago in the *Journal of the Anthropological Institute*,¹ that marriage within the *khel* was against all Naga law, and wives or husbands invariably must be sought outside; on questioning the people of several villages on this subject I received such contradictory answers that at last I found that each one was answering for his or her own particular case; that those who lived in *khels* composed of but one *jhat* declared that marriage within their own *khel* was prohibited, while those living in *khels* composed of several *jhats* declared emphatically that they did not have to go outside of their *khel* to seek a husband or wife. Children belong to their father's *jhat*, but there is nothing either in name, dress, custom, or place of habitation to indicate to what *jhat* they belong—it is only tradition. As the members of one *jhat* may be scattered through several villages many miles apart, it is more than likely that these *jhats* often do get an admixture of new blood. This interdiction of marriage in the *jhat* was undoubtedly designed to prevent inbreeding, but, since the mother's *jhat* is ignored, it is but a half measure, and the marriage of first cousins on the mother's side of the family and also of uncle and niece are unrestricted. In the Rengma village of Kotsoma there are four *khels* but only two *jhats*; three of the *khels* are made up entirely of one *jhat*, so that the men of these three *khels* must look to the fourth for their wives. They told me at this village that in former times men of the Lhoto and Sema tribes used to marry Rengma women, but that the Rengma men never married out of their tribe. In this small village there were eight feeble-minded children and one deaf mute, in all probability the result of too close intermarriage. How the *jhat* obtains its name I was unable to ascertain, its origin is lost in the dim past of three or four generations, but some Nagas maintained that it was the familiar name of the founder of the clan. The *khels* were usually named for some natural feature or from the position of the *khel* in the village, namely, the "upper," the "middle," or the "lower *khel*," or the "*khel* of the large *morang*" or watch house, or the "pond *khel*"; sometimes when composed of only one *jhat* it took its name from this *jhat*; but there is never anything in an individual's name to indicate to what *khel* or to what *jhat* he belongs.

¹ Gertrude M. Godden, "The Nagas and other Frontier Tribes of North East India," *Journ. Anthropol. Inst.*, xvi, p. 167.

The position of the villages on the crests of hills makes the construction of the houses mechanically difficult owing to the different levels on which they are built. Usually there is a main street or passage way along the ridge of the hill and the houses face each other with their front entrance on the level of the ground and their rear portion built on high piles and overhanging the slope of the hillside. Below the ridge-rows, on another level down the hillside, may be another line of houses scattered all round the knob of the hill or on little valleys and ridges between the crests. There is no attempt at levelling off the irregularities or removing large rocks from the passages between the houses. A heavy thatching of palm leaves and grasses serves as roof and the ridge-pole extends



FIG. 1.—THE VILLAGE OF NAOGONG.

far beyond the end of the house, forming a sort of verandah; or else it stretches out over the street to make a narrow and long gable-end which dovetails in with a similar extension on the roof of the house opposite, thereby almost completely roofing over the street between the fronts of the houses. Naga dwellings are not usually supplied with the luxury of a front door, but are quite well appointed if furnished with a screen of matting, which can be fastened up and held in place by two long poles crossed over it and tied to the door posts on either side. The side walls are about 4 feet high and are overhung by the eaves, so that there is small chance of the wind and rain beating through the strips of bamboo of which these walls are woven. The ground plan of the Naga houses is, in its main features, uniform in the several tribes that I visited; in some villages, where the hilltop or

ridge was broad, the houses were all on the flat ground and had no rear portion raised on piles. Beneath the overhanging front gable, separated from the rest of the house, there is quite often a small room closed in with upright poles whereto screens of bamboo are tied; this room is occupied by the old grandfather of the family, or else it is reserved for widows and old people who have no one to look after them. The front entrance to a house is usually barred, ineffectually it must be added, against stray pigs and dogs by a fence of broad posts about 2 feet high, with a slip-stake in the centre which can be removed or replaced when the pigs belonging to the household are to be driven in and confined for the night. When one steps over this barrier, and by good luck avoids stepping on a pig, a dog, a hen, or a baby, one enters the rice-pounding room; the floor is covered deep with the chaff of rice-husks, wherein fowls scratch and pigs burrow for stray grains of rice. On one side stands the trough-like rice-mortar, and on the other side is a rack whereon are hung rows of skulls of sacrificed cows, wild bulls, pigs, and not infrequently human skulls taken in head-hunting raids. Tucked in the loops of rattan and split bamboo, wherewith the house posts, partition walls and thatch are tied together, are all sorts of native-made farming implements, such as small hoes, short axes called *dhaus*, spear heads, snares for birds and small animals, sharp stakes of hard wood used for stabbing to death pigs and dogs at ceremonial feastings; water bottles made from gourds, etc., all rusty, dusty, dirty and soot-begrimed.

From the rice-pounding room one enters, through a narrow doorway, also provided with a barrier of wobbly stakes, the main large room of the house. In houses directly on the hillside, the floor of this room is slightly excavated, so as to make it level for at least two-thirds of its length. It is always exceedingly dark. Its only illumination sifts in under the eaves and through the narrow doorway at either end, and to add to the darkness, the smoke from the smouldering embers upon the hearth in the centre of the room obscures everything. The furniture consists of a few boards and very low benches (four inches high perhaps) which are placed round the central fireplace, where the housewives cook the food by day, and where the family and friends gather to gossip and smoke by night. At the far end of the room is a raised platform of boards or of coarse and heavy bamboo matting, whereon the father of the family, his wife, his daughters, and very young sons sleep, merely wrapped in their cotton blankets, without pillow or head rest. The young men of the household sleep at the "bachelor house" or *morang*, with which each *khel* is provided—except in the villages of the Sema and Angami tribes—therefore there is no need of separate rooms in the houses. In the Sema and Angami villages, where there are no *morangs*, there are separate alcoves in the main division of the houses, some of which are allotted to young girls, some to men. Beyond the main room, and corresponding to the rice-pounding room in the front, is a small room devoted to the storage of the tubs wherein the rice-beer (food and drink to every Naga) is made, and herein are stacked all the appliances needed in the brewing, wickerwork

sieves, funnel-shaped strainers of split bamboo, paddles for stirring the fermenting mash of rice, and pervading everywhere a nauseous sour smell, so heavy that it can barely escape through the doorway or the chinks in the wall. Beyond this brewery extends a slatted platform of bamboo projecting over the hillside and supported on high poles. So flimsy were these platforms in appearance, that I never dared trust my weight on them, but it is not unusual for the women to make workrooms of them in the daytime, and there set up their primitive and simple looms, and weave or card the native grown and home-spun cotton. They are chiefly used, however, for drying the rice before husking, and for spreading out the freshly dyed cotton thread.

Through the uneven thoroughfares and byways between the houses lean and lanky pigs, hungry dogs, and ruffle-feathered chickens forage for stray food; children clad in nothing but a small patch of hair on the crown of their head play games without toys other than pebbles or bits of wood; and old women stagger to their houses heavily laden with baskets on their backs filled with dry firewood, or they carry earthen jars or long joints of bamboo filled with water from the spring down the hillside. In front of many of the houses, the younger married women sit spinning cotton thread by feeding the fibre on a weighted bobbin, which they spin with their fingers and then hold suspended while it twists the strands; others tie their looms to the house-posts, and, seated on the ground, silently and industriously shift the long shuttle back and forth, weaving strips of cloth about 2 feet wide, which they sew together to make square blankets for themselves, their sons, and their husbands. The men rarely stay in the village during the day. They cultivate the rice-fields, collect fuel in the jungle, and keep clear the jungle paths between the villages of their tribe with whom they have trade in rice, cloth, tobacco, etc. Those who do stay at home employ their time in weaving bamboo matting, wherewith to repair their houses, and in polishing and cutting long beads and pendants for necklaces, from conch shells bought in the Assamese villages in the plains. They are, for the greater part, industrious, and seldom sit round the houses absolutely idle. The mountain air is invigorating and cool. The long nights supply good opportunity for sleep.

In every *khel* (except, as I have said, in the villages of the Semas and Angamis), usually on the highest ground, is a large well built house more open in front than the ordinary houses, and decorated with carving on the posts supporting the roof; this is the *morang* or "bachelors' house." Here is the assembly room for councils and dances, and the sleeping quarters for the young men of the *khel*. The *morang*, in the wild days before the hills were tamed, was the watch-house whence alarms were sounded, and where a close scrutiny of the gates in the stockade round the village or of the narrow sunken pathways leading thereto, was at all times maintained. When enemies attacked, the whole village was aroused by a loud beating on a long hollowed log, kept either in the verandah of the *morang* or in a thatched shed close by. These alarm gongs came to be regarded with almost sacred awe, because at the sound of their voice all

work ceased, sleep was forgotten, and the whole village was stirred to a ferment of activity. In some villages, I was told that the powerful god Ching Lum actually resided in the gong which they call "Tungkung." Young boys are forbidden to beat it, and women may not even touch it. On one end of the gong is almost always carved the head of the most powerful beast, the wild mountain bull, which the Nagas hunt, and although they sacrifice the animal to Ching Lum, they reverence it almost as a god. Its head is always to be found among the carved decorations of the two main front posts of the *morang*, although so conventionalized, that its identity is almost lost to the Nagas themselves, who were often unable to explain it to me.

The two front posts of the *morang*, one behind the other, are known as the male and female posts, and to them a certain sacredness attaches. When a *morang* is to be built these two posts are roughly hewn out and carved in the jungle, and, when ready for transportation, all the men from the *khel* assemble, and with much ceremony drag them to their final position and set them in place. Ropes of vine are fastened to them, and, shouting in unison, the villagers slowly drag the mighty logs home to the village. On one occasion I was so fortunate as to see the ceremony of bringing these posts to a village where a new *morang* was to be built; their acquisition seemed to cause as much excitement as the return of a successful head-hunting party. It was after dark by the time that these new *morang* posts had reached the foot of the steep ascent leading to the village, and a large bonfire was kindled on the eminence where the *morang* was to stand. With wild yells and savage bellowings, the male and female posts were hauled up the hill, over all obstructions, by the excited youths and men, decked out in their gayest ornaments and trappings of war. In the darkness, as I looked down on them from above, they appeared like a confused swarm of ants dragging a body many times larger than themselves over the ruts and stones of a country road. Some constantly let go their hold on the ropes of twisted vines, and ran aimlessly to lend a hand somewhere else where they were equally useless; others busied themselves in throwing logs for rollers under the posts; still others helped them over stones and gullies with levers, and all grunted, groaned and shouted, occasionally keeping time with the rhythmical blows which one of their number gave with the butt of his axe handle on the posts; but often the shouting was no more than a wild incoherent tumult. When they arrived at the site of the *morang*, panting with excitement and exertion, they dropped the ropes, and all together gave one long shout that died away slowly, and then was echoed from the surrounding hills through the darkness. In a twinkling innumerable joints of bamboo filled with rice-beer emerged from somewhere, and passed from lip to lip; the very air seemed suddenly to become fermented. After a few *pas seuls* by excited youths, who capered and posed with axe and spear glittering in the firelight for the approval of the circle of women that stood aloof in the outer darkness, the ceremonies ceased for the night. Next day a pig was killed by the soothsayer, and the omens revealed by the appearance of its pancreas were all that

could be desired; whereupon several other pigs were less ceremoniously put to death, and forthwith cut up and cooked in bamboo joints, and served with liberal potations of rice-beer. Still greater revelry was to take place when the house posts were to be finally put in position, and fire started for the first time in the new *morang*; but these ceremonies I was unable to witness.

In the village of the Miri Nagas (of all the tribes perhaps the least influenced by British control) the *morangs* were much more elaborate and seemed to be more used than elsewhere. The flooring of the *morang* is usually raised a couple of feet above the ground, and supporting the overhanging gable in front, stand, prominently, the carved male and female pillars. The carvings on the male pillar consist of four or five rows of squares, made by cutting deep grooves perpendicularly and horizontally across the flattened surface at the upper end, below the notch wherein the ridge pole rests. These squares are meaningless to the occupants of many of the *morangs*, who merely follow the time-honoured forms of decoration, but I am strongly inclined to believe from observing several carefully finished *morang* posts, that these squares are meant to represent human heads hanging on the posts; I was told that, in former days, when head-hunting was more generally practised than it is now, the heads of the enemies were placed on the posts. In the *morang* of the Rengma village of Kotsoma, each of these squares had eyes, nose and mouth carved upon it. Below these squares is the neck and head of the wild bull with horns carved in high relief recurving and encircling the post. In some few instances the bull's head is replaced by a tiger (which looked more like an obese lizard), sometimes two hornbill heads, meeting beak to beak, are carved in place of the bull's neck; and the backward curving horns, and a triangular representation of the head of the bull, are all that remains of the sacred animal. On the female post the topmost space, instead of being covered with the squares which I have assumed to be conventionalized human heads, exhibits carved conical projections, which were said to represent the breasts of women. Why women should thus be present in effigy, in a precinct from which they are utterly excluded, was not explained, beyond the assertion that it was merely a time-honoured custom. Below these breasts, a round concave depression betokened the conch shell ornament which Naga women wear on their chest. Below this the female posts are the same as the male. Usually, extending across the doorway of the *morang* is a mound of split bamboo matting, very springy and returning loud creaks and groans when stepped upon; possibly thus made on purpose to awaken the inmates in case of an unauthorized intrusion. In the Tamu *morangs* the whole floor of the large room is covered with wide hewn planks which act as excellent sounding boards for the rhythmical beat of dancers' feet, and also to impart emphasis to italicized harangues at councils of war. Along both sides of this room are stalls about six feet square wherein the young men sleep. In each stall a space is left bare of boards whereon fires may be built, and alongside of this space runs a narrow bench, a few inches high, of rough poles and boards which serves as a couch. In the smaller *morangs* the floor is not planked, but is the

bare ground, whereon fires are built on cold or stormy nights. When there is no dancing floor or council chamber in the *morang*, a raised platform is constructed outside and near by, whereon councils and dances are held, and where the men sit and gossip. Women are excluded even from these platforms. These bachelors' buildings are always the veritable home of the youths from early boyhood, until they marry and establish a household of their own. I could not find that there was any initiation when boys first left their parents' homes and slept at the *morang*; it seemed to be a civil rather than a social institution.

It is not alone in the *morang* that the main posts supporting the roof are regarded as sacred, or perhaps as the abode of household gods; in the private houses leaves are tied to these posts when the house is built, and over them at each harvest time or when fresh rice beer is brewed, a libation is poured; to them also are tied the feet or skulls of animals killed in the chase, and an egg shell from each hatching of a brood of chicks.

Among all the Nagas the Miris and Semas are decidedly the lowest in civilization; the Miris are often spoken of as "the naked Nagas"; in truth, when working in their fields and villages, the men wear absolutely nothing but necklaces and collarets of beads. In the cool of the morning and evening they wrap themselves in cotton blankets, but wear no loin cloth. The Aos, the next adjoining tribe, despise the Miris for their nakedness, declaring them to be no better than dogs or pigs. The Miri women also, although probably covered while in the village with a short skirt half way to the knee, are said to doff all garments while at work in the fields. The Aos wear not only a loin cloth, but also on ceremonial occasions an apron about a foot square, covered closely with rows of little white oblong seeds. The Ao women wear skirts almost to their knees and are almost always wrapped in a blanket, which is thrown over the shoulder somewhat like a toga, and hangs to the ankles (Pl. XLIV, 2). This is for protection more than modesty; when at work, they are stripped to the waist. The Rengma men and women dress like the Aos: the Semas wear no loin cloth but merely a narrow belt or roll of cloth round the waist with one end depending like a narrow apron about 4 inches wide. The clothing of an Angami man consists of a broad band of cotton cloth, dark blue or black, ornamented with three longitudinal rows of cowrie shells, and wrapped about the body at the waist, so that it hangs almost to the knee. Women wear plain skirts, a little longer than do the men, but fastened about their waists in a similar manner; they are furthermore covered with a blanket wrapped around their chests and hanging loosely down to their ankles. The ornaments worn by the different tribes do not vary much; they all wear large rings, either hoops of brass or white metal, in the lobes of their ears, and the men of all the tribes have holes cut through the conch of the ear, wherein they insert large tufts of white cotton, bright feathers, or even the skin of a small bird of gay plumage. The well dressed men of the Ao tribe wear in the lobes of the ear several pieces of fine brass chain, not native made with little weights on the ends (Pl. XLIV, 1). The women also have holes both in the conch and in the lobes of their ears. In the upper hole, which is usually small,

they insert a porcupine quill dyed red, or a small tuft of cotton; among women of the Ao tribe this aperture is large and close to the border of the ear; through it they wear rings of heavy brass wire in three coils, which they keep tied upright and flat against the head with a loop of string passing from one ring over the crown of the head through the ring in the other ear and then back of the head. In the hole in the lobe they wear either a single large brass ring or a pendant of crystal (or more commonly, now-a-days, of glass) about an inch and a half square and a quarter of an inch thick, with a narrow cleft running to a hole in the centre wherein the lobe of the ear may be caught (Pl. XLIV, 2). This seemed to be the one ornament for the ears peculiar to the Ao Nagas; I did not observe it in any of the other tribes; whereas brass rings and tufts of cotton seemed to be universal. Necklaces and collars of many coloured beads, made in Germany, and of long tubular beads of native manufacture, cut out of carnelian, or out of conchshell, are decorations worn by all tribes. The successful head-hunters of the Ao tribe wear, as badges of their prowess, collars composed of pairs of boar's tusks, which are tied point to point and base to base, so that they encircle the neck (Pl. XLIV, 1). Each pair of tusks so worn indicates an enemy's head taken in battle. None of the Nagas wear nose rings or mutilate the nose in any way. Only three of the tribes practise tattooing; both the men and the women of the Miri and of the Sema tribes to the northward of the Dikku river; and only the women of the Ao tribe. They gave as reason for the practice, that, were they not tattooed, they might be mistaken for slaves. The operation is regarded as a sacred function, and while it is being performed the house is tabooed to all strangers; and while women are being tattooed not even the men or boys of their own family are suffered to be in the house. There is always a preliminary sacrifice to the gods of a pig or a fowl. The ink is made of soot mixed with strained rice-beer, and the needles are sharp spiny thorns bound to a handle like a broad flat paint brush, which in turn is bound in a short, cleft stick at right angles. The needles are dabbed in the thick ink, and driven into the skin by using the instrument in the same manner as a chopper or a hatchet. The Sema men north of the Dikku river have their faces almost completely covered with narrow lines and rows of dots starting on the nose and following the curves of the eyebrows on the forehead and encircling the eye below on the ridge of the cheek bones; four parallel lines follow the curve of the lower jaw bone to the chin, and above and below the mouth several lines and rows of dots complete the facial decorations. Across the chest are four parallel lines, making four deep waves from shoulder to shoulder. Among the men of the Miri tribe at Tamlu, the middle aged seemed to be the only ones tattooed; the custom is probably dying out with head-hunting; it is the privilege of those only who have taken heads, to tattoo over the cheek bones and on the chests a pattern representing little triangular bodied men, just such as our schoolboys draw on their slates. From shoulder to shoulder across the chest they have also four parallel lines enclosed in a row of dots which dip down from the points of the shoulders to about the middle of the sternum. The pattern of the tattooing on the women I could not make out

clearly, owing partly to the fineness and dimness of the lines, and partly to a certain condition of the skin, shared in common by all their fellow Nagas, arising from the scarcity of soap. As well as I could discern, the marks consisted of an interlacing of fine lines as far up as the knee, resembling the lacings of sandals; above the knee, extending half way up the thigh, there appeared to be a series of narrow, perpendicular loops. I tried to persuade the old tattooer of the village to accept some fine needles as substitutes for the thorns she used, but she maintained that although they might be all right for white people, their use would surely make Nagas sick. Very probably she was right and spoke from experience; without proper care rust would soon collect on them, and then blood poisoning would inevitably follow. In the Ao tribe the women alone are tattooed, the men never. They have a cross lacing of broad bands from the ankle to the calf, above this a band of slim triangles with their apices ending in the points of a horizontally zigzag line below the knee; above the knee a band of arrow-shaped marks, the barbed heads downward and the shafts extending about half way up the thigh. On the middle line of the chest and neck is a chain of four lozenge shaped figures, the upper and lower angles meeting, and the chain ending in a triangle between the breasts. In the Mongsem *jhat*, from the uppermost of the lozenge-figures, four lines extend upward on the neck to a square on the point of the chin; in the Chungli *jhat* they continue up to the lower lip. Above the breasts are three herring-bone designs one above the other. On the back of the forearms above the wrist is a St. Andrew's cross, with a perpendicular line running through its centre, and with two dots to the other side. On the inner side above the wrist are three small similar crosses one above the other, with short wide-spreading arms. The Mongsem and Chungli *jhats* were the only instances, that I observed, of one *jhat* being differentiated from another by any mark.

The pain and swelling entailed by the operation is very considerable; I saw many freshly tattooed women, who, unfit for any work, sat dejectedly on the platforms at the back of their houses and mournfully contemplated their inflamed and swollen legs, or else leaned back against the wall of the house, stretching the stiff painful scars on their necks. The whole of the pattern is not tattooed at one time, but the operation is extended over a period of five years. The first cross marks on the legs are tattooed when a girl is about ten or twelve years old, next on the chest, neck and chin, then on the arms; in the fourth year the legs are finished, and in the fifth the knees and thighs. The operation is best performed during the winter months, while the weather is cool and the work in the fields less arduous.

Men, women and children, the last even when they are hardly able to toddle are thorough-paced tobacco smokers; except the Angamis, with whom the drinking of *zu* (rice-beer) supplies a substitute. Pipe smoking is almost the universal custom, although cigarettes are occasionally used. I have seen an Ao mother quiet her crying baby, probably a year and a half old, slung to her back in a blanket, by giving it two or three puffs at her pipe. The pipes are somewhat akin to the

Chinese water-pipe, with a receptacle of bamboo below the bowl wherein the nicotine and other juices collect. The natives claim that these juices have wonderful medicinal powers and are most efficacious against toothache. The tobacco is native grown and cured, and has the most repulsive of odours, which I can liken to nothing but the combined combustion of horses' hoofs, india-rubber and hair; but to the Nagas the odour is delightful.

It is to be feared they are very far removed from godliness, so totally unacquainted are they with cleanliness either of person or linen. In the first place, water is scarce and must be carried up the weary, steep hillsides; furthermore the mornings and the evenings are cool, and fresh breezes blow; furthermore it is not fashionable to be clean. On questioning quite a number of them I found that a month was no unusual period to elapse without changing or washing the skirt or blanket, and the body got attention no oftener. One middle-aged man asserted absolutely without embarrassment that he could not remember ever having washed his face or hands—indeed the most casual glance confirmed his veracity.

To the north and east of the Nagas are Lamaism and Confucianism, to the westward are Hinduism and Mohammedanism, to the southward a mixture of Brahmanism and Buddhism, and to the eastward pure Burmese Buddhism, and for many years Christian missionaries have been working among them. Thus encompassed, and thus influenced, they have not had much chance to evolve an original theology.

Hampered by the necessity of an interpreter I cannot pretend to give more than an outline of their religion and folk-lore; and even this may be imperfect through misinterpretation.

Throughout the different tribes I was able to trace a belief in one powerful god, and several lesser gods of the harvest, and many revengeful demons. The chief god appears to be the protector of mankind, and to him sacrifices and offerings of grain and fruit must be made that he may avert or alleviate the malignity of lesser gods who have been offended, and who seek revenge by afflicting man with poor crops, sicknesses, sudden blindness and deafness. In one or two of the tribes there is a belief in a god, sometimes a goddess, of the harvest, to whom pigs and fowls must be sacrificed when the grain is planted. The chief god, said some, dwells in the large sacred rubber-trees which are always growing near the *morangs* in every village; others declare that he lives in the great wooden gong outside of the *morang*; others again maintain that he is underground at the foot of the sacred tree.

In Tamlu, a Miri village, I was told that a large columnar stone, standing upright in one of the streets, was Kagong, the chief god. The stone had been fenced in, and on the fence were hung the bodies of sacrificed fowls and the skulls of pigs. The Miri description of Kagong is that he has but one leg, is emaciated, and usually hangs, doubled up, with his arms hanging downward, over a long rope-like vine stretching between two trees in the depths of the jungle. If he looks at anyone, that person immediately falls desperately ill. The Lhotas believe

that in the jungle lives a goddess whom mortals cannot see, but they hear her laughing, and should she breathe on them they go crazy; they likewise maintain, however, that the *chief* god lives in the *fiens*-tree. Beneath almost all of these sacred trees there are several round stones, six or seven inches in diameter, which are also sacred, and which, they assert, are the abodes of the lesser gods. These stones are said to have come of their own accord, and no one dares to touch them unless he desires to take an oath as to honesty in word or deed. The gods that live in these stones make it their duty to see that none of the prescribed rules of Naga social life are disregarded; and to them, once a year, two old men, appointed by the villagers, sacrifice a pig and a fowl; and on this occasion the sacred stones are rearranged neatly around the foot of the tree. The bodies of the animals thus sacrificed may not be eaten. If the gods dwelling in these stones become displeased, one or two of them disappear; then follows some awful calamity to the village. The existence of the stones beneath the sacred trees was almost always denied by the villagers; only by personal investigation was their presence discovered, and only by persistent questioning was their sacred character revealed. On one occasion, in a village where the original sacred tree had died and there remained only a remnant of the decaying trunk, a new tree had sprung up in its place, but the sacred stones were nowhere visible. The villagers said there was a legend that long ago, even beyond the memory of the oldest man in the village, there used to be many round stones beneath the ancient tree, wherein the gods lived, and that even now they believed the stone habitations of the gods were there, covered by the fallen tree trunk and the tangle of roots and vines. They furthermore said that in olden days the heads of enemies were hung on the tree, and even then, as now, women were forbidden to approach it nearer than twenty or thirty feet. In the Angami village of Nerhama, the natives declared that there was no sacred tree sheltering the stone abodes of the gods, but investigation of the largest tree on the outskirts of the village brought to light at its roots one long stone, rounded off and smoothed by mountain torrents, and half buried in the ground. This, they finally admitted, was the god Kipu, and no native dared approach nearer than ten paces to his sacred abode, now somewhat neglected. The story of Kipu is that two men long long ago while hunting in the jungle were most fortunate in killing deer on many successive days, and each time that they ran down their game they found themselves near this peculiar long grey stone. It was therefore undoubtedly a god of good fortune, and with great care they lifted it and carried it many miles to their village, and placed it beneath the large tree that stood near one of the gates of the stockade. For years it was worshipped as the abode of the god of war and of the chase, and to it pigs and fowls were sacrificed. If ever the enemy came near that stone their doom was sealed; they could not escape; for Kipu protected the village. Since battles have ceased in the hills, Kipu's occupation is gone and no offerings of pigs or fowls fall to his lot.

On a ridge near the Sema village of Champimi, surrounded by a circle of trees, is a large oblong stone about nine feet long by about two feet wide; one

end is split off and lies close by. There are no other stones of any size in the neighbourhood, and this perhaps accounts for the reverence with which this large piece of sandstone is regarded. I was told by men from the village that this stone was the god Puzzi; that long ago, before the English came to the hills, it was not broken but stood upright, and was so bright and glistening that no one could approach nearer than many paces to it. Now, however, Puzzi was dead; Tukko the Angami god, came from another hill, and there was a fierce fight, in which Puzzi was cut down and his head chopped off. One of his ears, severed from his head, lies in the valley below, and one of the natives ran down the hillside and pointed it out to me. The cause of the fight none could say; the Angami have always been friendly to the Semas and have never attacked their villages. Despite the fact that Puzzi is dead, the spot where his body lies is hallowed ground and is kept free of weeds and undergrowth. When they make their clearings for rice fields in front of the body of Puzzi, they sacrifice a fowl, and from its entrails may be read the omens good or bad for their harvest. The body of the fowl must not be eaten, but must be hung on one of the trees near by, and some of its feathers tied to stakes near Puzzi's head. In many places the stone is smoothed off where the people of Champimi have used it as a whetstone for their knives and axes. There is no attempt at carving on the stone, nor is there any especial time when axes or knives are sharpened upon it.

The Naga legends concerning the creation of the world were vague. The Miris said that two gods made the hills and valleys; Chelok, by striking the earth with his enormous staff, raised it into welts, and Nagman, sweeping his staff along the ground, made the level plains. Nagman lives in the sky, and when he dances we hear the thunder of his feet and the perspiration dropping from his body comes to us as rain. The world was populated by the offspring of one mother, who emerged from the ground and at one time gave birth to a man, a bear, a deer, a tiger, an elephant, a rat, and a mouse. These multiplied and filled the world. The mother of all is still alive, and follows the herds of wild hogs in the jungle; she is never seen by man except under penalty of instant death; but sometimes they hear her rustling among the leaves and they see her footprints.

The Lhota legend is that in the beginning all people lived under the earth in a place called Lichun; one day while a party of men were out hunting, a man named Limhacha and a half-witted companion suddenly came forth to the surface of the earth through a narrow cleft. They ate the fruits that they found and tasted cool clear water which was new to them. Finding that they had discovered a much pleasanter place than Lichun, they returned and showed the path to their friends. The last man to come up was named Rankantan and he closed the gap, so that the newly discovered country should not be overcrowded. From these first people above ground originated the twenty-two clans of the Lhotas. When Lhotas die they go again to Lichun.

The sacrifices to the gods and the propitiation of the evil spirits are usually occasions of general feasting in the village, and all share in the benefits which may

result. When a man is ill and tossing in fever on his hard couch, he promises to the gods that, should he recover, he will sacrifice a cow or a wild bull and observe certain abstinences, such as from smoking or from drinking rice-beer, until the days devoted to the sacrifice and the feasting are over. It may, however, be many days, weeks, or even months after his recovery, before he is able to afford the cost of the sacrifice. On the appointed day, however, true to his promise, the cow or the bull is tied by the horns to a large forked stake near his house, and with due ceremony is slaughtered. It is customary on these occasions to make the animal suffer as much as possible, and its neck is first hacked by the sacrificer with a dull and very crude iron axe, kept in the village for this purpose; then all hands fall to and club and stab the poor animal to death. Its body is cut up in small pieces and distributed throughout the *khel* or the whole village, together with bountiful supplies of boiled rice, rice-beer, and packages of salt and ginger-root. The giver of the feast keeps the skull, and is allowed to place the forked stake in front of his house, as a sign to all men that he has fulfilled his vow to the gods. The skull of the sacrificed animal is hung in his house, and small portions of the flesh are wrapped in leaves and tied to the central house-post or to the forked stake outside. This is the custom among the Miris, the Aos, and the Semas; the Rengmas, the Lhotas, the Angamis, and the tribes closely akin to them combine the propitiation of the gods with honouring their parents, and when in dreams the spirits of their forefathers come to them saying that they have not been sufficiently honoured, that they are wandering and unhappy in the other world, and desire a stone whereon to rest, it is then the duty of the sons to drag up from the valley or the mountain side a huge boulder which shall be set up near, or in, the village as a lasting record of their affection. When a boulder of proper size has been selected, a red cock is carried to the stone, and after carefully washing its feet they place it upon the boulder; should it crow and not try to fly away, the omen is good, and the stone is pleasing to the gods and the spirits of the ancestors. The stone is then disembedded and placed upon a large wooden sled with long ropes of vines attached, and it is dragged to its new position in the village.

At Mao, or Sepfume, as the Angamis call it, I saw this ceremony of dragging a stone to the village. The huge boulder of sandstone, about five feet in diameter, had been dug out of the hillside, and placed upon the sled about an eighth of a mile from the village; a long procession of boys and young men went slowly down the trail from the village, led by two older men carrying spears and wrapped in snow-white blankets. The boys and youths hummed in harmony, accenting the humming in time with their slow and dignified steps. In their dances and in such processions as this, they walk with a measured tread, placing the ball of the foot upon the ground first, and balancing their weight for a second on this foot before they take another step; this gives a stately, dignified pace, which does not in the least suggest creeping or sneaking. When the two old men, one a fortune-teller, the other the giver of the feast, took their stand in the excavation close by, from which the stone had been taken, every boy and youth of the

company at once provided himself with a stick or a small stone. The fortune-teller,—or perhaps he might be called the chief priest,—produced from under his blanket a leaf cornucopia of rice-beer which, while muttering invocations to the gods, he poured over some green leaves tied to the sled, and then again from under his blanket he produced a white chicken bound tightly in a network of split bamboo. Freeing it from its bonds he waved it above and around the stone, holding it by the legs and at the same time murmuring prayers to the gods to be propitious and send bountiful harvests and good fortune to the village. As soon as his prayers were finished the fowl was flung on the ground in front of the expectant group of men and boys; instantly from all directions stones were thrown, and sticks beat at it, and its life was instantly crushed out as a sacrifice to Orameh, the chief god of the village. Two young men, stripped of all clothes but their loin cloths and necklaces of beads, jumped on the top of the stone, and standing there in statuesque pose, gave the signal for the sled and its burden to start up the roughly cleared path through the jungle. The men gave deep bass shouts and the boys alternated with piping trebles, and so, keeping time as they tugged at the ropes, they started the monument on its journey. When they arrived at the outskirts of the village near to where the stone was to rest, they dropped their holds and all ran helter skelter with loud shouts to the house of the giver of the feast, where each was refreshed by a drink of rice-beer. In a few minutes all assembled again in a broad open space on the edge of the village, forming a large circle, and, apparently as the spirit moved them, the youths one by one dashed out to the centre of the admiring group and performed energetic and agile dances, springing high off the ground, sawing the air with their legs and arms, and giving forth the war-ery of the Angamis, which sounds like the shrill crow of a cock. When twenty or more had displayed their proficiency, there pranced into the circle an elderly man dressed in all the equipments of Naga war-dances; on his head he wore a cap of split bamboo decorated in front with a pair of flat, wooden horns; on his body were numerous scarfs and breast-plates trimmed with red dyed goat's hair, and tied to his back like a tail was a quiver, also adorned with red goat's hair, wherein warriors carry sharp bamboo stakes, which, placed in paths, impede and injure the feet of pursuing enemies. In his right hand he brandished a spear, and in his left he carried, by a finger entwined in the hair, a small flat wooden figure of a man. He seemed to be the public jester; his capers and rapid sidelong sallies at the bystanders elicited loud laughter from the boys and men, who dodged and ran as he shook his spear or waved the little wooden figure in their faces. This little effigy was possibly a reminder of the days of head-hunting, when an enemy's head was taken on such occasions to pay homage to the memory of the ancestors for whom the monumental stone was placed in the village. When the jester retired, the company adjourned to the house of the feast-giver and there were regaled with unstinted measures of thick unstrained rice-beer, which they drank out of leaf cups; to each was also given a small packet of ginger-root and salt

wrapped in a banana leaf; young girls and boys passing in and out among the guests seated on stones, on upturned rice mortars, and on the bare ground, replenished the cups, and distributed packets of the condiments to engender thirst.

When the host has had time—a month or more perhaps—to prepare a new supply of beer and other food, a second feast is given, and the monument is settled in its final resting place. This is the occasion for the sacrifice of cows and wild bulls and unlimited feasting on meat—a great luxury. After that the sacrificer is entitled to have bulls' horns carved or painted on the front boards of his house and to put over the gable large cross pieces representing horns, and he is recognized by all as a man who has fully honoured the souls of his ancestors.

The Miri and Ao tribes bury their dead in coffins supported on stakes about five feet high and surrounded by a fence of interlacing strips of bamboo. The coffins are made to represent the hornbill bird, and at either end are rough carvings of the head and of the tail feathers. The renown of an individual is indicated by the number of these heads or tails—three such meaning a person of great importance. On the coffins and on stakes near by are hung the blankets, the pipe, the ornaments, the weapons and some of the other utensils used by the defunct, and also a bamboo-joint filled with rice-beer, some food and some tobacco to keep the soul equipped and supplied until it reaches the abode of the dead, which lies indefinitely to the south-westward. In front of the coffin a fire is kept burning for several days to frighten away wild animals. After several months, when the body has dried up, the family of the deceased open the grave and separate the skull from the body, and place it in an earthen jar, which is staked down to the ground and covered with a cone-shaped thatch of palm leaves. When the corpse has been placed in the burying ground it is the duty of the eldest brother or the nearest relative to remain near by and repeatedly shout the name of the deceased; when he is exhausted, the next nearest relative takes up the task. The reason for this I could not ascertain, but it was not, so said the Miris, to announce to those who had gone before the advent of a new comer.

The widow or the widower on returning from the burial makes new fire in the house, brings fresh water from the spring, and for one year, or probably until after the next harvest, forbears wearing ornaments, changing the clothes, or cutting the hair. The ornaments and implements hung on the graves are consecrated, and anyone stealing them would surely die a speedy and miserable death.

With the exception of these two tribes all the others bury their dead in the ground either close by the village or in the village streets in front of the houses, or, when a child or a young girl dies, in the earthen floor of the houses themselves. I was told by a Sema Naga, who pointed out to me on the floor of his house the newly made grave of his little girl, that he had buried her there because she would be so frightened to be left out in front of the house with nothing but the sky above her at night.

Over the graves in the village are built circular cairns about 2 feet high, walled up at the sides and covered with small flat stones on top. In addition, over the graves of men of importance are set up posts where to are fastened the heads of sacrificed cattle, and sometimes effigies ornamented with some of the weapons or war costume of the deceased. The Angamis sometimes bury more than one person in one grave, and when the large flat cairns occupy a commanding position in the village they make excellent look-outs and lounging places. On many of them I observed gourds of rice-beer buried up to the neck so that the spirit of the departed should not get thirsty during the long sleep.

The men I questioned were in general a little doubtful as to whether the spirits of the dead remained in the corpse or near the grave, or went to a far off country; some thought that the spirits of dead people dwelt on a high hill to the southward or toward the setting sun; others maintained that the spirits of their people remained near the village and rested on the stone monuments put up in their honour; while others—the Lhotas and Maothana Angamis—gave a definite description of the abode of departed souls. When a person dies, they believe that the spirit goes to a heaven under the ground where everything is exactly the same as in this life; parents are re-united with their children, and husband and wife live over again the happy days spent in the upper air. The land is rich in trees flowers and animals of all sorts; the sun shines by day and the moon by night. When they die a second time, the souls pass to another heaven below the first, unlit by sun, moon or stars, where the souls live and die again; but when they die for a third time the souls come back to this earth as butterflies or small house flies, and in this shape perish for ever. When these small flies light on their wine cups, they will not kill them for fear of destroying someone of their ancestors. They have no tradition of a mortal having visited the land of the dead and returned; all their knowledge of the nether world comes to them from the fortune-tellers who have visited "Etzuli" in dreams. The spirits of the dead are not visible to human eyes; but dogs can see them, and if a dog howls or barks when no stranger is near, they believe that the souls of the dead are hovering about. They all seem perfectly assured that after death they will see again all the relatives and friends who have died before them.

In each village, there are certain old men, to whom is given the power to read the omens portrayed in the pancreas of pigs, and in the intestines of chickens; these old men are the only ones who are allowed to touch the round stones under the sacred tree, and they must plant the first rice in the fields after the jungle clearing is finished. They are in fact the high priests, but on ordinary occasions, they dress and conduct themselves as ordinary men; on state occasions, such as the dedication of a *morang*, or when the sacred stones are arranged at the foot of the figs-tree, they wear blankets of distinguishing colours.

In eliciting the omens from the pancreas of a pig, great care must be taken, in killing the animal, that no blood is lost; to this end the poor beast's snout is bound tight with thongs of leather, or a rope of rattans, and then a sharpened bamboo

stake is driven through its side, piercing the heart, and it is then beaten on the neck with a club. When the pancreas is cut out, the surface of the organ must not be scratched nor torn in the slightest degree, and to foretell good fortune it must be of a clear red colour, clean and smooth. It must be flat, and not crinkled or turned up at the edges. If black, or discoloured, or in any way irregular in shape, it foretells misfortune. The flesh of the pig, except when it is sacrificed to the sacred stones, is eaten by the people, but the pancreas is the share of the priest.

Auguries are obtained from fowls by the examination of two glandular appendages, which are partially connected with the lower end of the intestines; if these appendages are full and round, and of an even length, the omen is favourable. When the auguries are consulted in relation to marriage, if these appendages are of uneven length, and their rounded free ends do not point forward, it is most unfavourable. Neither the husband nor the wife will be happy, and the woman will probably die very soon after marriage. If the little outgrowths of fatty tissue which hang all along the intestines point upward, it foretells that a girl will be born first to the newly married couple; if the particle of fat hang downward, it will be a boy. Before the chicken is killed for auguries, its neck is plucked bare of feathers, so that no blood will cling to it, and after the omen has been taken, the body is hung up on the sacred ficus-tree, or on the forked stump in front of the house. At the time of propitiating the demons who look after the welfare of the village and live in the sacred stones, the fowl, which is used for omens, is thrown into the jungle, and no one may eat its flesh.

Simple fortune-telling in cases of sickness seems not to be the office of only a few old men or women in a village, but for such purposes anyone may consult the gods. When a man falls ill, the first thing to be done is to determine which god it is that is responsible for the illness. In order to do this, the interpreter between gods and men cuts two small discs of ginger-root, which are smoothed off on one side, and then placed upon the blade of a knife, which he holds in his left hand; with the blade between the index and middle finger of his right hand, he snaps these two small discs off to the ground, after having murmured an injunction to them to tell the truth. According to the manner in which these discs fall, whether they turn over or not, he interprets the god who is at fault, and after repeating the operation several times, announces to the friends and relatives, to which of the gods a sacrifice should be made.

The Nagas take oath in several ways, the commonest of which is to bite a tiger's tooth kept for the purpose, and then to eat some of the earth from a grave, saying at the same time, "The gods will see me, and if I am lying, they will send a tiger to eat me, or they will turn my head to earth like this grave." The most binding oath is for a man to put a small bit of his cloth, a hair from his head and a pinch of earth, on the blade of a *dhou*, or axe; then, taking the back of the *dhou* blade between his teeth, he calls the sun and the moon to witness that he is telling the truth. If he is not, may he never have good harvest again, and may he die a miserable death. Women may take oath in the same way as men, but

they usually merely bite the tip of their forefinger, when they wish to impress the fact that they are truthful. If a man is suspected of theft, and wishes to prove his innocence, he will put his hands upon the sacred stones beneath the figs-tree, and swear by the gods inhabiting them that he is not guilty. A form of oath used by the Angamis is, "May I be eaten by a tiger, and may my harvests be nothing but stalks; may my rice grow up and then may the beards of grain grow down into the earth again, if I am not speaking the truth." They seem to have absolute confidence in a man's statement, after taking oath in this manner. I once questioned the trustworthiness of such an oath, and an Angami Naga said: "Possibly a white man might live after breaking his oath, but a Naga would surely die." Their death rate must be large; the Angamis, above all others, are treacherous liars.

Their dread of tigers is born of bitter experience, for the jungles in the valleys are infested with them, and to the Nagas they are demons incarnate. If a man is killed by a tiger, his house and all his belongings are burned, and his whole family must go through elaborate purification, as if to exorcise an evil spirit. If a man's or woman's mangled body be found in the jungle within two or three miles of the village, his whole family divest themselves of every thread of clothing and go to the body, and simply wrapping it in a bamboo mat, leave it where it was found; returning to their village, they burn down their old house and build an entirely new one; new fire is started on the hearth by means of the fire-saw, and they wash themselves carefully, cutting their hair and paring their nails; not a single possession of the one who has been killed may be used again.

The horror of the nocturnal stealthiness of the tiger is so impressed upon the Naga that they have endowed this beast with the same supernatural qualities that are found connected with the wolf in the folklore of Europe, as far back, at least as the second century. Among the Nagas the tiger-man takes the place of the were-wolf, and in almost every village there will be some who maintain that they know tiger-men, but apparently they always live in out-of-the-way villages. These tiger-men, who are in league with the demons, are also fortune-tellers, and are much feared. They have the power of changing themselves into tigers, and in this manner revenge themselves upon an enemy by killing him and his pigs and his cows. When they wish to change back into men, the tiger-man's wife must throw her clothes over the tiger's head, and at once he will change back into his human form. If anyone kills him while he is in the shape of a tiger, he is dead, and cannot regain his human form. The accounts of these tiger-men, which I got entirely without suggestion from many Nagas, bear a striking resemblance to the well-known legends of were-wolves, wherein it always seemed to be necessary, in order that the man should change back into human form again, for the wife or some near friend to throw an article of clothing over the head of the animal, be it wolf or tiger.

The custom of taboo is carried out to a marvellous degree among the Nagas, and from the number of occurrences and actions which can put a household under

this ban, it would seem that social life in the villages would be exceedingly hampered. The indication that a house is tabooed consists of placing on the door-post bunches of leaves, and tying across the doorway one of the long pestles used for pounding the husks from off the rice. Among those tribes where tattooing is practised, the house is under a strict taboo, during the operation, against men, even of the same village, and whenever a man or woman is sick in a house, and the fortune-teller is called in, the prohibitory leaves are put up on the door-posts. It is also the custom when any of the domestic animals are giving birth to young or when a brood of chickens is being hatched, for the house to be under a taboo for periods varying from two to ten days; and when a woman gives birth to a child, the house is tabooed against every one, even members of her own family, with the exception of her husband and her mother.

A custom which I have found constant throughout Borneo and the Naga hills, is that of making new-fire by means of the fire-saw on all ceremonious occasions, when fire is necessary. When a new house is built, it is by this method alone that the fire may be started, and when a family goes out of mourning for a dead relative the first food cooked must be prepared over a fire started by this method. It is probably the most primitive process for obtaining fire, and on this account looked upon as the invention of the demigods who were ancestors of all mankind, and therefore sacred. It is a striking instance of the tendency to return to the primeval in all ceremonials.



1. The Headman of Nunkum : Ao Nagas.



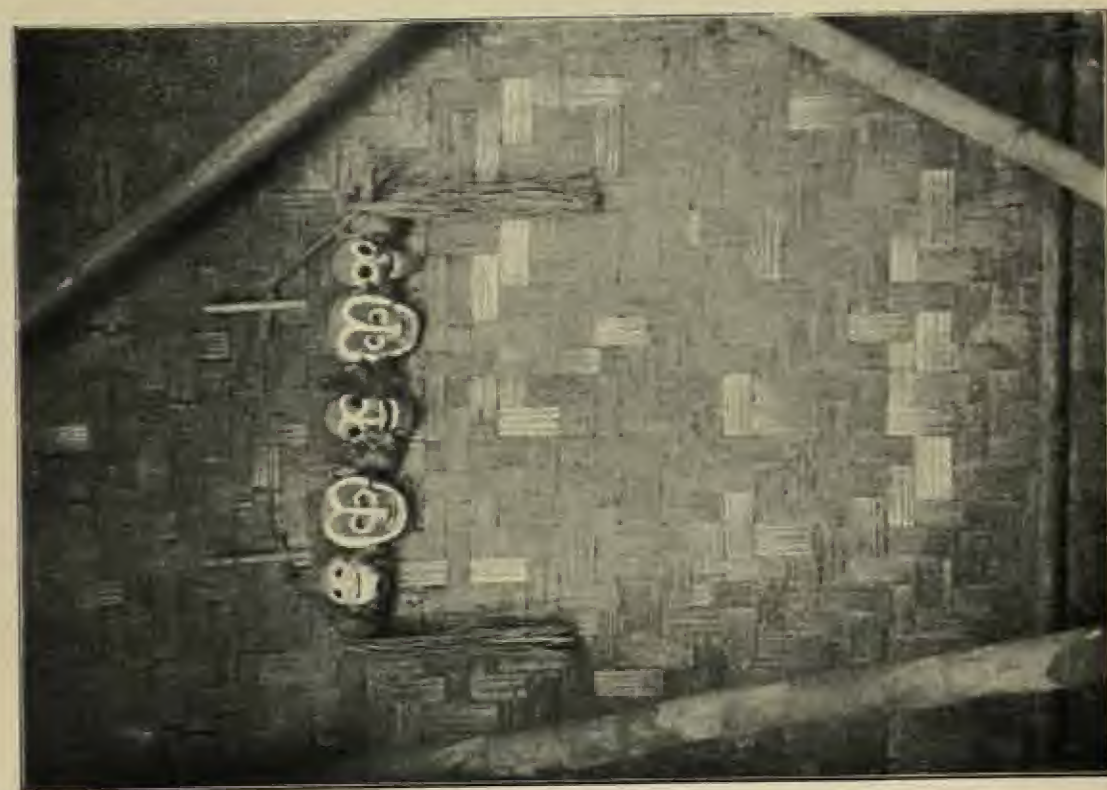
2. Ao woman.



2. Headman of Naogong, War Costume, Ao Naga.



4. Unmarried Girls of Nunglang, Sema Nagas.



5. Heads made of gourds and of wood to record a head-hunting raid.



6. Head-hunter's trophies hanging beneath the eaves of a house at Tamin, Muri Nogos.

THE NYASSALAND TRIBES, THEIR CUSTOMS AND THEIR POISON ORDEAL.

BY I. T. MCGGRIDGE.

Tribes.

My work has hitherto lain almost entirely in the Shiré Highlands and at the south end of Lake Nyassa, so that there are a good many of the Nyassaland tribes whom I have had no opportunity of observing in their homes. However, I will stick to what I really do know, and I hope some of it may be useful.

The *Manganja* (also called Anyanja or Anyassa) must at one time have been spread all over the southern shores of Lake Nyassa and the Shiré Highlands; they are a very unwarlike tribe—they themselves say with perfect unconcern that "every Manganja has the heart of a chicken." For fifty years or so before the Administration pacified the country in 1891-92 they must have been perpetually harried, raided and enslaved by the neighbouring tribes, and particularly the Ajawa and Angoni. There are still considerable settlements of them on the southern shores of Nyassa, but the remnants of the tribe settled most thickly round Mlaili and Cholo Mountains, whose steep sides afforded them hiding-places from war parties. In their present security they are lazy and slovenly to a greater degree than the other tribes; yet they are not without intelligence, and some of them who have been taken in hand by missionaries and others have been educated into excellent interpreters and skilled labourers. Their language has become a sort of *lingua franca* all over southern Nyassaland, owing, no doubt, to their having been the slaves of every tribe.

That peculiarly ugly ornament the *mpelete* is almost universally worn by Manganja women. As young girls the upper lip is pierced and the hole is enlarged by the insertion of pieces of stick of increasing size till a small *mpelete*—a saucer-shaped metal disc—can be inserted. As they grow older they insert larger and ever larger *mpeletes*, and I have seen old hags with their upper lips distended and thrust forward by a disc as large as a five-shilling piece.

The *Achikunda* are perhaps more nearly related than any other tribe to the Manganja, their language and habits being very similar. The Achikunda are essentially a river people, being settled thickly along the Shiré River below the Murchison Rapids, and stretching downstream through Portuguese territory to the Zambesi, where they are known as *Achishma* ("people of Shima"). On the Zambesi they are very skilful metal-workers and in other ways are more advanced than their relatives upstream. This is probably due to centuries of contact, and,

to some extent, of interbreeding with the Portuguese. Near the Anglo-Portuguese boundary on the right bank of the Shiré is a village which is regarded as sacred concerning which there are much more definite superstitions than I have come across in the Highlands, but as my knowledge of it is vague and second-hand I will not attempt to describe it at present.

The *Ajawa*—slovenly pronunciation has led to this tribe being commonly spoken and written of as *Yaos*—are physically the finest of the South Nyassa tribes. They are also remarkable for a higher sense of personal decency, or modesty, and lower morals than those of other tribes. The Ajawa and Amachinga (a subdivision of the same tribe) are widely spread over the Shiré Highlands and, in Portuguese territory, down the Ravuma nearly to the sea. They have a strong tendency towards Mahommedanism which, especially about Fort Johnston in South Nyassa, has taken a real hold among them. Its influence is certainly elevating; the Fort Johnston Ajawa are cleanly in their habits and self-respecting; the better class of them dress neatly in white Arab *kanz* (a garment suggestive of a long loose nightshirt) and, frequently, Zanzibari jackets of a Mahommedan type. A slight strain of Arab blood is not uncommon among them; many of them can talk, or even write Swahili; and all like to be thought to know it. On the other hand prostitution—unknown among other tribes in their natural state—seems to have come naturally to the Ajawa, and this tendency with its consequent evils is more obvious in Fort Johnston than elsewhere. The Ajawa were great slave-traders in the old days, and in most villages are one or two men who have been as far as Zanzibar; they are distinctly the aristocrats of British Central Africa. In 1890-92 they made more of a fight against the British than any other tribe, and have since proved the best material for native troops under British officers.

Angoni.—Some fifty or sixty years ago, as far as can be judged, a party of Zulus—said to have been a defeated impi who dared not return home—trekked north and settled on the high plateau west of Lake Nyassa and the Shiré River. It seems that they brought but few women with them, and this fact no doubt started them on the slave-raiding career which they carried on till the British occupation. They married slave women, and seem as a rule to have treated their male slaves after a time as members of the tribe, with the result that their Zulu characteristics rapidly disappeared. The people now known as Angoni, who come down in large numbers to work as carriers, etc., in the Shiré Highlands, are of mixed race, in which the Manganja element and characteristics predominate. In Angoni-land proper, I am told that there are still some two hundred of pure Zulu blood; but the tribe, which is now very numerous, seems as a whole to have lost the warlike tendencies that made it a terror to its neighbours in past years, when the Ajawa alone seem to have held their own against them. With the exception of the Wa Ukonde of North Nyassa, the Angoni are the only cattle-rearing tribe in British Central Africa.

The *Atonga* are a numerically weak tribe settled on the east coast of Lake

Nyassa. They will probably take a leading place among British Central African tribes in the new order of things, as they show an intelligence and enterprise, coupled with an appreciation of the value of wealth, which is very marked by contrast with the apathy of their neighbours. Five years ago large gangs of Atonga used to come to the Shiré Highlands to work on the plantations for money, but they have found out that more can be made by collecting rubber for sale to traders or slipping across the border and finding their way down to the high wages of South Africa, and they do not now often appear as labourers in the Shiré Highlands, though many of them work as store boys and skilled labourers. They are the most expert and daring thieves of British Central Africa. They make good soldiers and are largely used—though not in the same numbers as the Ajawa—in the composition of the two British Central African Battalions.

Anguru.—This large tribe have for many years followed their own devices in the no-man's-land known as Portuguese territory south-east of British Central Africa. Now that the Portuguese are establishing forts along our boundary, and thence sending out parties of uncontrolled Black Police who murder, rape and loot under the name of tax collecting, large numbers of Anguru are crossing into British territory and settling there.

They are the most thoroughly uncivilized natives I have come across; I have seen gangs from the south-east of Mlaili Mount, in which both the men and women were entirely naked, though as a rule a small strip of bark cloth is worn. An idea of their intellectual capacity may be formed from the fact that in a gang who worked on my plantation some four years ago the best counter owed his superiority to the size of his mouth, in which he found room to stow the ends of all his fingers one by one, counting up to ten as he did so. At this point—his fingers being all disposed of and his toes not available—he broke down. He could get as far as ten but no further, and the moment he withdrew his fingers from his mouth his mind became a blank again. However, as no other member of the gang could get as far as ten, his erudition was thought remarkable.

The Anguru, whom we are now encouraging to settle, seem to be slightly more advanced than those with whom I had to deal in my planting days. They build their own huts and settle down contentedly to work for the Ajawa in return for food until they can raise their own crops. They adapt themselves quickly to their new surroundings, and should soon be seeking work in large numbers and making themselves very useful as carriers.

Religious Tendencies.

Excluding newly introduced religions (Christianity and Mahommedanism), religion seems to have no part in the lives of British Central African natives. It is true that on Cholo Mount there is a sacred stone, and that sometimes, after a severe drought, parties of natives go up to the stone and leave old hoes there with an idea that rain may follow. Most natives, when asked, will say that there is a God (*mlungu*); and one, an Atonga, once told me that a great snake lived below,

and ate bad men when they were dead; but I attribute this to ill-digested recollections of missionary teachings, which have been more or less disseminated through the country for twenty years or more; in any case the existence of a Deity, though admitted, is not a fact which impresses the native or dwells in his mind. I have come across no religious ceremonies of any sort.

The Ajawa make neat little graves for their dead, in graveyards near the villages, fence them in, and erect a shelter over them. They leave the huts of the dead to rot and fall to pieces of themselves. The burying of a person of any importance is an excuse for much drum-beating and beer-drinking.

The Manganja select a piece of forest and bury their dead there; they place the burnt-clay cooking-pots of the dead man near his grave, having first made holes in the bottom of them which render them useless to the living. Whether this implies an idea of an after-life, and that the pots are supposed to be for the use of the dead, I have not been able to discover.

These cemeteries are never encroached on, so that a Manganja cemetery is always indicated by a clump—covering perhaps $\frac{1}{4}$ acre—of fine well grown trees, a rare object in British Central Africa; as, owing to the wasteful methods of native cultivation, few bits of land are left uncultivated for more than thirty years or so, and bush-fires do not allow trees to attain a great size in that time.

Both Ajawa and Manganja have a horror of a body that has died a violent death. I have observed, after an expedition against an Ajawa village, the bodies of a couple of men, who were shot, left to rot where they fell, as their friends would not touch them. Again, I have killed a crocodile which on being cut up was found to have the brass bangles of an Achikundu woman in its belly; my Ajawa and Manganja carriers immediately left the beast and would not touch it again. Some Atonga, however, were not so particular, and dined off the crocodile.

The only tribal ceremony I know of is the *nyago*, an initiation-dance for girls on reaching a marriageable age. Sir Harry Johnston in his book describes this in dog-Latin, if I remember rightly; it cannot very well be written in English. The Ajawa also have a *nyago* for boys, of which circumcision is the principal feature.

Another Mahomedan custom which is universal among the Ajawa is the abstention from (1) the meat of an animal whose throat has not been cut sufficiently soon after death for blood to come, and (2) pig flesh. More than once, when, in a hungry camp, I have killed wart-hog, the Manganja and other natives have at once fallen to and had a great feed, while the Ajawa sat apart, looking unhappy, but resolutely refusing the meat. Meat of any sort is a great luxury to natives, and the behaviour of the Ajawa must have cost them a considerable effort.

The Muavi Poison Ordeal.

The poisonous bark of the *muavi* tree is the principal factor in a form of trial by ordeal which is firmly believed in by all the Nyassaland tribes with whom I have any acquaintance. The natives now recognize that, for some inexplicable reason, the white man disapproves of *muavi* and is apt to show his disapproval

in an unmistakable way; and with their usual docility they are gradually dropping the use of it.

All natives (so far as my experience goes) profess, when questioned, absolute ignorance of what the tree is like or where it is to be found. Their invincible obstinacy on this point is probably due simply to fear of being thought to know anything about the forbidden traffic, and not at all to a desire to prevent the white man from destroying every *muavi* tree in the country, which would be a very simple cure for the whole trouble. The tree must certainly be uncommon, as natives have to travel long distances to procure the bark.

The old-fashioned trial by *muavi* under the auspices of a chief is getting rare now, as the chiefs in the more settled districts are afraid to try it. Their hold over their villagers is very slight now, and a *muavi* trial almost always results in a relative of the victim straightway reporting to the *Boma* (Collector's Court).

During the eight months that I was Acting Collector at Blantyre I only had one genuine case of the sort, though one or two trumped-up stories were brought in, with results unpleasant for the accuser. In this case (which is pretty typical) a petty Ajawa chief living near Blantyre had had a considerable quantity of calico stolen out of his hut, and decided to go into the case himself with the help of an elderly relative who enjoyed some reputation as a medicine man.

Lots were cast to discover the criminal; the preliminary casting indicated a village near Soche Mount, whither the detectives adjourned with a considerable following. They went through this village trying each hut, and finally the lot fell on a young man who, I should say, from such evidence as I could afterwards collect, was nowhere near the scene of the theft when the calico was stolen. In justice to the medicine man I should also say that I could find no evidence of any quarrel between him and the man against whom the lot fell.

The young man was bound and taken back to the village whence the calico was stolen, some three miles away, and was there compelled to drink *muavi*—the bark, pounded and mixed with water. His brother Salimu followed and watched the proceedings, and the *muavi* having been drunk, was allowed to take charge of him. Salimu remained with his brother under a tree near by for some three hours, and then he vomited and Salimu carried him back to his home—weak, but not permanently the worse. This vomiting, which saved his life, should according to native ideas have been a proof of innocence, but when confronted with the dilemma that the lot had apparently fallen on an innocent man they gave their opinion that he must have stolen the calico, whatever the *muavi* had to say about it, for the lot could not lie. Salimu having deposited his brother in his own hut, came to the *Boma* to report. Fortunately natives are not clever enough to be very far-seeing liars, and though all his villagers perjured themselves stoutly in defence of the chief, they broke down badly under cross-examination, and the truth was easily arrived at. The chief and medicine man were allotted three years' imprisonment apiece.

As to the method of casting lots, I have only the unsupported and possibly

imaginary story of my interpreter to go on. The witnesses (fearing no doubt that an admission of knowledge would get them into trouble) one and all returned that most irritating answer *kaia* ("I don't know") to all questions on the subject. There is no doubt that a horn of a sable antelope which was produced in court, stuffed with roots, odds and ends of calico and other dirty-looking charms to keep it in a state of magical efficiency while out of use, was the principal instrument in the lot casting. This horn I brought home with me.

My interpreter's account is that the horn is filled with white beans, with one black one among them, and that these beans are shaken out, one for a village, or individual, as the case may be, till the appearance of the black bean indicates the guilty person. This is very likely true, but my experience is that an intelligent native, when asked for information by his master, will, in his anxiety to please, prefer inventing a story to giving none at all, so I accept information of this sort with caution.

Muavi trials of this sort are, as I have said, getting less common; the use of *muavi*, which it is most difficult to stamp out, is one for which heavy punishment seems absurd. Women are usually the offenders; after a quarrel with another woman or with her husband which has reached the pitch of accusations of adultery or witchcraft—*mfiti*, wizard or witch, implies the possession of something like evil eye; an *mfiti* is also supposed to add to his or her supernatural powers by corpse eating—it is not uncommon for a woman to drink *muavi* to prove her innocence of the charge. As a rule the taste of the *muavi* does away with her excitement and shakes her faith in the harmlessness of the poison to an innocent person; then if her village is near the *Boma* she rushes off and explains matters to the Collector, and a powerful emetic sets matters right again.

Where the woman obtains the *muavi* from on these occasions I have never been able to discover; probably there is a medicine man in most villages who keeps a supply, but the other natives will never give him away; being, I suppose, too frightened of him rather than too loyal. Some deaths have been reported to me following incidents of this sort, and no doubt a good many more take place and are kept quiet.

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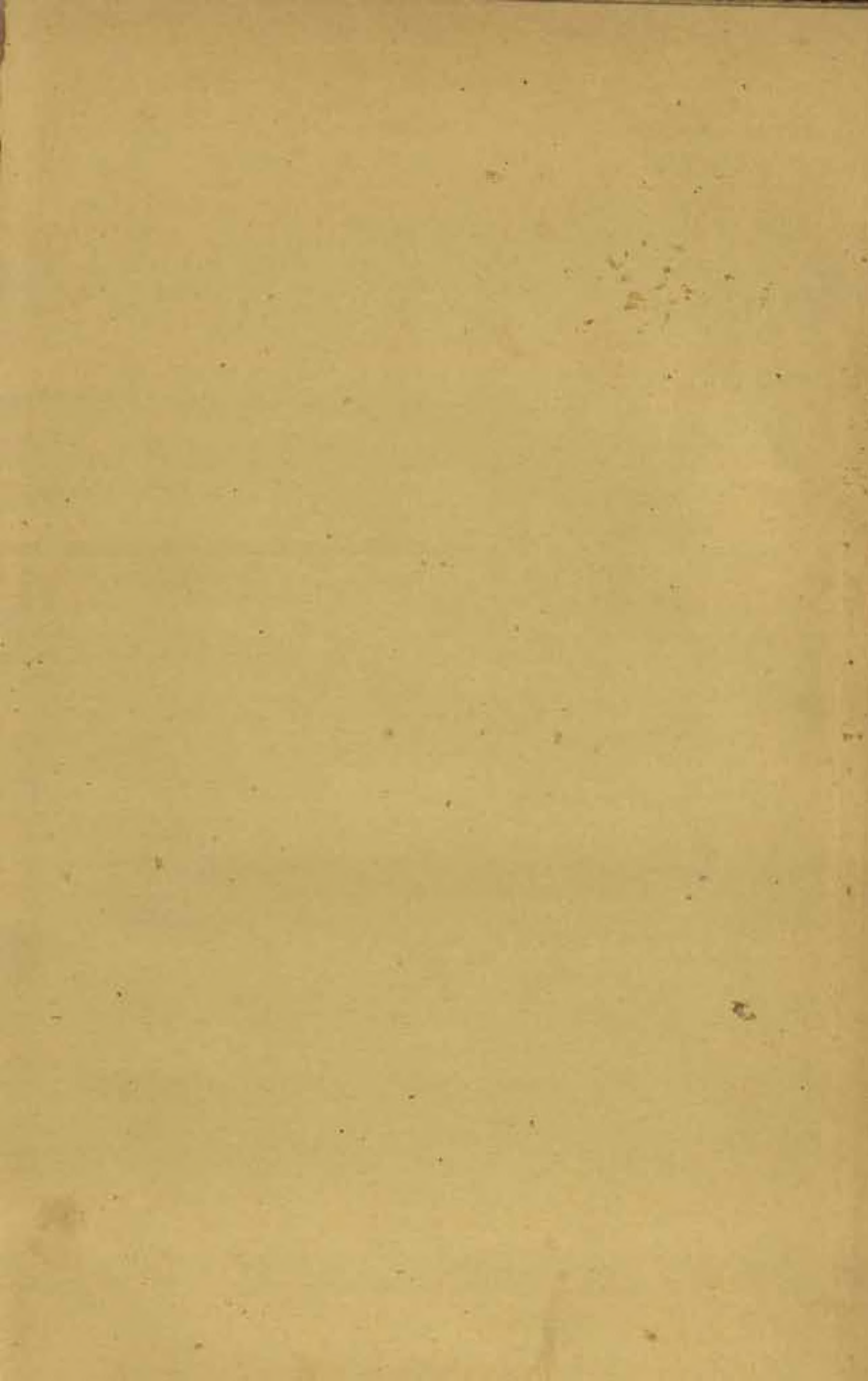
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